



STATE OF MARYLAND

DHMH

Maryland Department of Health and Mental Hygiene

*Larry Hogan, Governor - Boyd K. Rutherford, Lt. Governor - Dennis R. Schrader, Secretary*

---

January 13, 2017

Mr. Gabriel Nah  
Grants Management Specialist  
Office of Acquisition and Grants Management  
Centers for Medicare and Medicaid Services  
U.S. Department of Health and Human Services  
Mailstop #7700 Bethesda  
5600 Fishers Lane  
Rockville, MD 20857

Stephen Cha, MD, MHS  
Director, State Innovations Group  
Center for Medicare and Medicaid Innovation  
Centers for Medicare and Medicaid Services  
7500 Security Boulevard  
Mail Stop WB-02-49  
Baltimore, MD 21244

Dear Mr. Nah and Dr. Cha:

I am pleased to submit Maryland's State Health System Innovation Plan (SHSIP), produced with the support of a State Innovation Model (SIM) Round Two Design Award from the Centers for Medicare and Medicaid Services (CMS) and the Center for Medicare and Medicaid Innovation (CMMI).

Over the past two years, hundreds of stakeholders have led and participated in discussions on the key aspects of health system transformation prioritized in Maryland. The output of this robust stakeholder input has been the design of three key initiatives: the preliminary design and guiding principles of an accountable care organization for individuals dually eligible for Medicare and Medicaid, a strategy to prioritize population health initiatives and population health measurement, and a plan to increase connectivity between the State-designated Health Information Exchange and post-acute and long-term care providers.

These initiatives, combined with the groundbreaking payment and service delivery reform initiatives already underway in Maryland, will drive a sustainable, value-based approach that will improve care and health outcomes for all Marylanders. We eagerly look forward to continuing our close and productive collaboration with CMS as we move forward in the further design and implementation of the innovations presented in this SHSIP.

Sincerely,

Shannon McMahon  
Deputy Secretary of Health Care Financing

# **Maryland State Health System Innovation Plan**

**State of Maryland**

**Department of Health and Mental Hygiene**

**State Innovation Model Design Grant**

**January 13, 2017**



# Table of Contents

---

<b>Acronyms</b>	<b>2</b>
<b>Tables and Figures</b>	<b>6</b>
<b>List of Appendices</b>	<b>7</b>
<b>Executive Summary</b>	<b>8</b>
<b>Chapter 1: Maryland Health Landscape</b>	<b>12</b>
<b>Chapter 2: Vision for Health System Transformation in Maryland—The All-Payer Model</b>	<b>16</b>
Maryland’s Vision for All-Payer Transformation	16
The All-Payer Model	17
Care Redesign Amendment	23
All-Payer Model Progression Plan	25
<b>Chapter 3: SIM Activities to Support Health System Transformation</b>	<b>31</b>
Duals Accountable Care Organization	31
Skilled Nursing Facility Connectivity Study	48
Population Health Activities	55
<b>Chapter 4: Supporting Transformation—Health Information Technology</b>	<b>69</b>
Existing Data Infrastructure	69
CRISP	71
Emerging and Upcoming Health IT Endeavors	76
<b>Chapter 5: Maryland Workforce Activities</b>	<b>80</b>
DHMH Loan Repayment and Other Workforce Development Programs	81
Graduate Medical Education	81
Workforce Development for Community Health Workers	84
Population Health Workforce Support for Disadvantaged Areas Programs	86
<b>Conclusion</b>	<b>88</b>
<b>Appendices</b>	<b>89</b>

# Acronyms

---

Acronym	Definition
<b>ACA</b>	Patient Protection and Affordable Care Act
<b>ACO</b>	Accountable Care Organization
<b>ADT</b>	Admission-Discharge-Transfer
<b>AHEC</b>	Area Health Education Center
<b>APCD</b>	All-payer claims database
<b>APM</b>	Alternative Payment Model
<b>ASO</b>	Administrative Services Organization
<b>BMI</b>	Body mass index
<b>CAIS</b>	Center for Analysis and Information Services (MHCC)
<b>CALiPHR</b>	CQM Aligned Population Health Reporting Tool
<b>CCD</b>	Continuity of Care Document
<b>C-CDA</b>	Consolidated-Clinical Document Architecture
<b>CCIP</b>	Complex & Chronic Care Improvement Program
<b>CCM</b>	Chronic care management (fee)
<b>CDC</b>	Centers for Disease Control and Prevention
<b>CDS</b>	Controlled Dangerous Substances
<b>CHW</b>	Community health worker
<b>CMMI</b>	Center for Medicare and Medicaid Innovation
<b>CMS</b>	Centers for Medicare and Medicaid Services
<b>CPC+</b>	Comprehensive Primary Care Plus
<b>COPD</b>	Chronic Obstructive Pulmonary Disease
<b>CPHIT</b>	Center for Population Health Information Technology (Johns Hopkins)
<b>CRISP</b>	Chesapeake Regional Information System for our Patients
<b>CRS</b>	CRISP Reporting Services
<b>CY</b>	Calendar year (January – December)
<b>D-ACO</b>	Duals Accountable Care Organization
<b>DHMH</b>	Department of Health and Mental Hygiene
<b>DHR</b>	Department of Human Resources

<b>Acronym</b>	<b>Definition</b>
<b>DME</b>	Direct medical education
<b>DUA</b>	Data Use Agreement
<b>eCQM</b>	Electronic clinical quality measure
<b>EH</b>	Eligible hospital
<b>EHR</b>	Electronic Health Record
<b>ENS</b>	Encounter Notification System
<b>EP</b>	Eligible professional
<b>FFS</b>	Fee-for-service
<b>FY</b>	Fiscal year (July – June)
<b>GBR</b>	Global budget revenue
<b>GME</b>	Graduate medical education
<b>GSP</b>	Gross state product
<b>HCBS</b>	Home- and community-based services
<b>HCIP</b>	Hospital Care Improvement Program
<b>HIE</b>	Health information exchange
<b>HSCRC</b>	Health Services Cost Review Commission
<b>ICN</b>	Integrated Care Network
<b>ICT</b>	Interdisciplinary Care Teams
<b>IGME</b>	Innovations in Graduate Medical Education
<b>I/DD</b>	Intellectually/developmentally-disabled
<b>IDN</b>	Integrated Delivery Network
<b>IME</b>	Indirect medical education
<b>IT</b>	Information Technology (also, health IT)
<b>JHU</b>	Johns Hopkins University
<b>JHHS</b>	Johns Hopkins Health System
<b>LHIC</b>	Local Health Improvement Coalition
<b>LTC</b>	Long-term care
<b>LTPAC</b>	Long-term and post-acute care
<b>LTSS</b>	Long-term services and supports
<b>MACRA</b>	Medicare Access and CHIP Reauthorization Act of 2015

<b>Acronym</b>	<b>Definition</b>
<b>MCDB</b>	Medical Care Data Base
<b>MCO</b>	Managed care organization
<b>MDS</b>	Minimum Data Set
<b>MFFS</b>	Managed fee-for-service
<b>MHAC</b>	Maryland Hospital-Acquired Conditions Program
<b>MHBE</b>	Maryland Health Benefit Exchange
<b>MHCC</b>	Maryland Health Care Commission
<b>MHHD</b>	(Office of) Minority Health and Health Disparities
<b>MIPS</b>	Merit-based Incentive Payment System
<b>MSSP</b>	Medicare Shared Savings Program
<b>NF</b>	Nursing facility
<b>OPHI</b>	Office of Population Health Improvement (DHMH)
<b>OOP</b>	Out-of-pocket
<b>NQF</b>	National Quality Forum
<b>PAU</b>	Potentially-Avoidable Utilization
<b>PBPM</b>	Per beneficiary per month
<b>PCHH</b>	Person-Centered Health Home
<b>PDMP</b>	Prescription Drug Monitoring Program
<b>PMPM</b>	Per member per month
<b>PQI</b>	Prevention Quality Indicator
<b>PWSDA</b>	Population Health Workforce Support for Disadvantaged Areas
<b>QBR</b>	Quality-Based Reimbursement
<b>REC</b>	Regional Extension Center
<b>RJWF</b>	Robert Wood Johnson Foundation
<b>ROI</b>	Return on investment
<b>RRIP</b>	Readmissions Reduction Incentive Program
<b>SHIP</b>	State Health Improvement Process
<b>SHOP</b>	Small Business Health Options Program
<b>SHSIP</b>	State Health System Innovation Plan
<b>SIM</b>	State Innovation Model

<b>Acronym</b>	<b>Definition</b>
<b>SNF</b>	Skilled nursing facility
<b>SPA</b>	State Plan Amendment
<b>TCOC</b>	Total cost of care
<b>UMBC</b>	University of Maryland, Baltimore County
<b>UMMS</b>	University of Maryland Medical School
<b>VDU</b>	Virtual Data Unit

# Tables and Figures

---

No.	Name
<b>Chapter 1: Maryland's Health Landscape</b>	
1-1	Per Capita Costs in Maryland Associated with Chronic Disease Burden
1-2	Proportion of Maryland Population Who Are Either Overweight or Obese According to the Behavioral Risk Factor Surveillance System (BRFSS)
1-3	Top Chronic Diseases in Maryland
<b>Chapter 2: Vision for Health System Transformation in Maryland—The All-Payer Model</b>	
2-1	Competitive Transformation Implementation Awardees
2-2	Illustration of Potential Milestones for Maryland Health System Transformation Activities
<b>Chapter 3: SIM Activities to Support All-Payer Transformation</b>	
3-1	Full Duals by County, FY 2016
3-2	Membership of the Duals Care Delivery Workgroup
3-3	D-ACO Theory of Change: Comparison of Current FFS System with D-ACO Model
3-4	D-ACO Driver Diagram
3-5	Illustrative D-ACO/PCHH Care Continuum
3-6	Financial and Interpersonal Relationships within the D-ACO Model
3-7	Conceptual Illustration of D-ACO Reward-Risk Formula
3-8	SNF Health IT Developer Market Share (N=55)
3-9	LTPAC Facility Connectivity and Access to CRISP
3-10	Hospital Data Needs and Potential Data Sources
3-11	Approach to an Integrated Delivery System
3-12	The 3 Buckets of Prevention
3-13	Partners in the Population Health Measures Project
3-14	The Maryland Population Health Framework
3-15	Set of 15 Population Health Measures
3-16	Care Plan Exchange Approach
<b>Chapter 4: Supporting Transformation—Health Information Technology</b>	
4-1	Overview of CRISP's Connectivity



# List of Appendices

---

**Appendix A:** Integrating Care to Meet the Needs of Medicare-Medicaid Dual Eligible Beneficiaries in Maryland

**Appendix B:** Implementation Plan for Connecting Skilled Nursing Facilities to Health Information Exchange

**Appendix C:** Maryland Population Health Improvement Plan: Planning for Population Health Improvement

**Appendix D:** Maryland Population Health Measurement Development

**Appendix E:** Care Plan Exchange Report

# Executive Summary

---

This report serves as the State's final deliverable for the State Innovation Model (SIM) initiative, the State Health System Innovation Plan (SHSIP). It reflects the activities that the State of Maryland has undertaken to plan for and effectuate health system transformation. Maryland's SHSIP is unique in that it describes the efforts under the State's SIM Round Two design project, as well as the efforts under the All-Payer Model Agreement. Maryland sees both of these pathways, working in tandem, as means to promoting transformation in the state.

## The All-Payer Model

The Centers for Medicare and Medicaid Services (CMS) and the State of Maryland entered into the Maryland All-Payer Model Agreement ("Agreement") effective January 1, 2014. The Agreement established performance measures that limit the allowed growth in all-payer hospital revenues and required savings to Medicare program of at least \$330 million over five years, as well as quality improvements. Among other performance measures, the Agreement also required that Maryland hospital reimbursement models be transitioned away from fee-for-service models to global and population-based models over the five years of the Agreement. The All-Payer Model is the foundation of health system transformation in Maryland.

The State developed global budgets for hospitals to accelerate the movement away from volume and to focus hospitals' efforts to improve patient-centered care and population health. Under global budgets, hospitals receive an annual fixed revenue budget tied to population. If volumes increase, hospitals will need to decrease rates to remain within the fixed budget parameters. If volumes decrease, hospitals may adjust their rates toward reaching the global budget.

For the first two years of performance under the new model, Maryland had lower revenue increases on an all-payer basis, higher savings for Medicare and increased quality. The All-Payer Model saved Medicare \$251 million of the \$330 million required over the five-year demonstration. Maryland now seeks to bend the cost curve for the total cost of care by improving the coordination of care through implementation of care transformation and alignment activities.

Ensuring the sustainability of the All-Payer Model demands that Maryland's delivery system develop partnerships and infrastructure that will transform the delivery of health care. Since hospital expenditures are fixed based on service areas and geographic measures of population, designing a total cost of care model that can measure performance while the system transitions to more patient-centered and population-based approaches requires similar collaboration. Therefore, Maryland and CMS have formalized an Amendment to the All-Payer Model Agreement that allows the State's providers to take on more responsibility for controlling the total system cost growth by implementing care redesigns that extend beyond hospitals, allowing for continued success under the All-Payer Model while accelerating the transition toward more comprehensive alignment. This approach will allow hospitals to share resources with providers practicing at hospitals and ambulatory locations as long as quality targets are met, costs do not shift between payers, and the total cost of care does not rise above benchmarks. The approach will allow Maryland to incentivize improvements that address the needs of

high-cost, high-need beneficiaries, realize cost savings from reducing avoidable utilization and lay the groundwork for further provider alignment as the State moves ahead in the progression of the All-Payer Model. In addition to physician alignment activities, the Amendment requires the submission of a population health plan in July 2017.

Additionally, the Agreement between CMS and Maryland calls for Maryland to submit a proposal for a new model no later than December 2016, which limits the Medicare beneficiary total cost of care growth rate across all health services and settings, and will account for the Medicaid total cost of care as well for individuals dually-eligible for Medicare and Medicaid. In response, Maryland—with extensive stakeholder input—has developed a Progression Plan that lays the foundation for a total cost of care model, which rests on the principles of fostering accountability, aligning measures and incentives, encouraging payment and delivery system transformation and ensuring the availability of tools to support providers. Furthermore, the State has designed the Maryland Comprehensive Primary Care Model to drive health care transformation and to promote primary care as a strategy to lower health care expenditures and raise health outcomes.

## **State Innovation Model Project Activities**

In 2014, the Maryland Department of Health and Mental Hygiene (DHMH) received a Round Two SIM design grant, with the scope of activities focused on designing a Medicaid Integrated Delivery Network (IDN) for individuals dually-eligible for Medicaid and Medicare, designing new population health measurement activities, and funding to study connectivity between Maryland's health information exchange, the Chesapeake Regional Information System for our Patients (CRISP) and skilled nursing facilities (SNFs). Maryland's approach to its SIM design grant reflects the State's unique delivery system as well as the status of two intertwined pathways to transformation that the State agreed to pursue with the federal government.

To avoid parallel processes that might conflict with one another, Maryland approached the activities under the SIM grant and the expansion of the All-Payer Model as a braided approach to health system transformation. The activities that occurred under SIM were part of a larger vision toward an all-payer health system transformation and were determined to be key initiatives by the State and its stakeholders during its SIM Round One Design project and the broader discussion surrounding the All-Payer Model Agreement and ensuing Progression Plan.

While SIM activities formally fell outside of the All-Payer Model Agreement, SIM activities surrounded and supported the All-Payer Model, and the All-Payer Model provided a foundation for SIM activities, including the following scopes of work:

- The Duals IDN planning work provided a critical linkage between Medicare and Medicaid. Dual eligibles are well recognized as a high-cost, high-need population that impact expenditures on both the Medicaid and Medicare side. Designing a model to improve their health outcomes and quality of life requires the participation of both programs to avoid cost-shifting and misaligned incentives. With extensive stakeholder input, Maryland is planning for an accountable care organization (ACO) structure that incorporates the specific needs of the duals.

- One of the key activities for transformation is increasing the coordination of care between hospitals and post-acute care providers. The State’s SNF Connectivity Study analyzed health information technology (IT) connectivity between SNFs and CRISP and is a key part of laying the groundwork for increasing care coordination—a critical component of reaching the performance goals set by the All-Payer Model, as well as supporting the initiatives of the Duals IDN.
- Finally, one of the goals of the All-Payer Model is to move providers and health systems toward increased population health management and measurement to promote prevention strategies and enhanced health outcomes, as exemplified by the population health plan required by the Model Amendment. Maryland recognizes that management alone is not sufficient for sustained improvement in health and lower spending over the long term. As such, Maryland’s SIM project has developed a strategy to think through priorities for reducing risk factors, improving underlying health status and identifying long-term improvement intervention opportunities. These and other SIM-funded population health activities—including a framework for measuring population health—will build on existing population health initiatives to advance health systems and providers towards alignment of transformation efforts moving forward.

Another set of components key to transformation efforts includes the activities that CRISP has undertaken to promote the transfer of information between different providers, including health systems, ambulatory providers, health departments and other groups. This extends beyond the Admission-Discharge-Transfer data and Encounter Notification Service functionality that CRISP has already developed. CRISP is working toward expanding meaningful connectivity to providers beyond hospitals so that ambulatory providers will also be able to transfer rather than simply receive notices. Maryland has supported these efforts through various financial mechanisms that extend beyond hospitals, allowing for continued success under the All-Payer Model while catalyzing the transition to broader models. This includes the SIM-funded Care Plan Exchange Planning project that provided an environmental scan of the current state of care plan sharing in Maryland.

## **Maryland’s State Health System Innovation Plan**

Maryland’s approach to this report aligns with its approach to health system transformation—with the All-Payer Model and SIM-funded project components working in concert to improving the health of populations and reducing the per capita cost of health care.<sup>1</sup>

Chapter 1 provides an overview of the health care environment in Maryland, including population health indicators.

Chapter 2 is focused on the All-Payer Model, describing the policy and financial levers that have driven the success of the All-Payer Model to-date, opportunities for further alignment using Care Redesign Programs under the Amendment and Maryland’s vision for the transition to a total cost of care model that extends beyond the walls of the hospital. Chapter 2 addresses the SHSIP core areas of value-based

---

<sup>1</sup> Institute for Healthcare Improvement. (2009). The IHI Triple Aim. Available: <http://www.ihl.org/engage/initiatives/tripleaim/pages/default.aspx>; accessed 16 November 2016.

payment and service delivery, health care delivery system transformation, design and performance objectives and stakeholder engagement.

Chapter 3 goes in-depth on the components across the three thematic areas of Maryland's Round Two SIM Design project—a Duals IDN, SNF Connectivity and Population Health—described briefly above. Similar to Chapter 2, Chapter 3 includes elements of the SHSIP core areas of value-based payment and service delivery, health care delivery system transformation, design and performance objectives and stakeholder engagement, in addition to planning for population health, health IT, monitoring and evaluation and finally, operations and sustainability.

Chapter 4 builds on the health IT elements introduced in Chapter 3 to provide an overview of the data and health IT resources and functionalities in the State, and how they are supporting practice and overall health system transformation today and as envisioned for the coming years.

Chapter 5 details workforce development initiatives in Maryland, providing clarity on how the State is leveraging the All-Payer Model to support health worker training across levels of profession.

# Chapter 1:

## Maryland's Health Landscape

---

To gain a broad understanding of population health, Maryland incorporates measures of health outcomes, utilization and health determinants from multiple sources. The State reviews a variety of measures including aggregate levels of health outcomes, relevant position compared to its peers, risk factors and expenditures, among others. Currently, the metrics are geographically-segmented at the State- and County-level; however, there are ongoing efforts to develop a more granular understanding of Maryland residents' health. The State also looks to the characteristics of its payers and provider infrastructure in order to present a full picture of its landscape.

### Health Status in Maryland

Maryland consistently ranks in the upper tier of states on composite rankings of health. For example, in the United Health Foundation's 2015 America's Health Rankings ("the Rankings"),<sup>2</sup> Maryland was ranked overall in eighteenth position out of all fifty states. Along these same lines, the Commonwealth Fund's 2015 Health System Scorecard ranked Maryland in the top quartile for Access and Affordability, and in the second quartile for Prevention and Treatment, Healthy Lives and Equity.<sup>3</sup> However, Maryland fell behind other states in regard to Avoidable Hospital Use and Cost, where Maryland was ranked in the bottom quartile. This lower ranking was related to relatively high levels of readmission and higher-than-average scores on Prevention Quality Indicators (PQIs). These results were supported by a 2016 report from the Robert Wood Johnson Foundation (RWJF). The RWJF County Health Rankings creates summaries regarding performance on a variety of health outcomes by county compared to the national median for each county in the US.<sup>4</sup> Generally, Maryland counties were above the median in health-related outcomes and clinical care. However, the State's performance in regard to the social determinants of health was evenly split above and below the national median, suggesting there is significant work left to be done.

### Risk Factors and Determinants

Maryland recognizes that health outcomes and health equity are often driven by what happens outside of the traditional health care system. Accordingly, Maryland monitors major social determinants of health, associated risk factors, and related health behaviors that have been shown to not only result in poor health outcomes for individuals with chronic disease, but also to be leading drivers of health care cost increases (see Figure 1-1).<sup>5</sup>

---

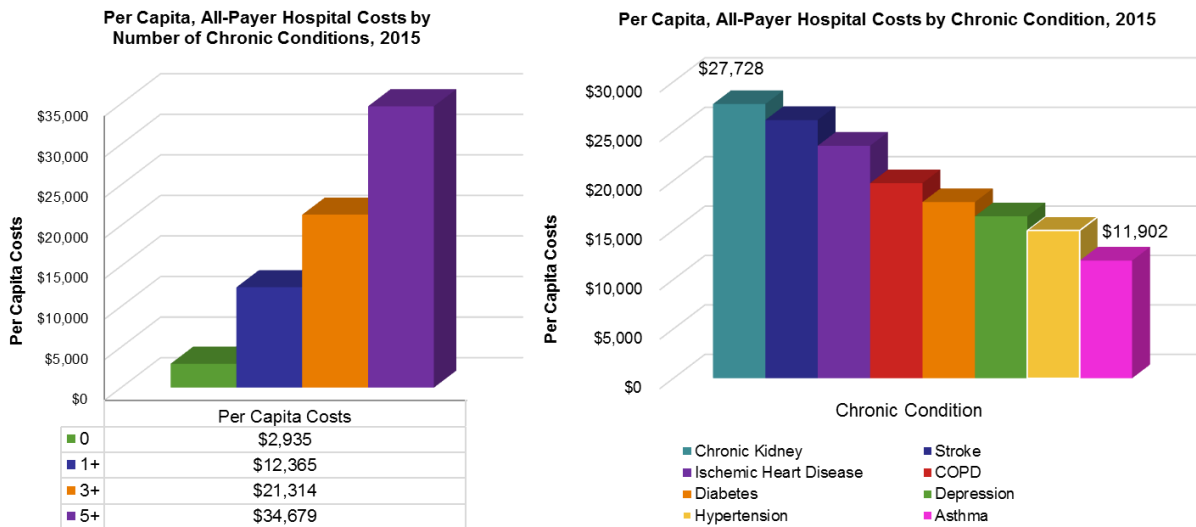
<sup>2</sup> America's Health Rankings, United Health Foundation. Maryland 2015. <http://www.americashealthrankings.org/explore/2015-annual-report/state/MD>

<sup>3</sup> The Commonwealth Fund, 2015. Aiming Higher: Results from a Scorecard on State Health System Performance, 2015 Edition. <http://www.commonwealthfund.org/publications/fund-reports/2015/dec/aiming-higher-2015>

<sup>4</sup> Robert Wood Johnson Foundation, 2016. County Health Rankings and Roadmaps. <http://www.countyhealthrankings.org/app/maryland/2016/overview>

<sup>5</sup> Braveman, P., Egert, S and Williams, DR., 2011. The Social Determinants of Health: Coming of Age, *Annual Review of Public Health*; 32:381-98.

**Figure 1-1: Per Capita Costs in Maryland Associated with Chronic Disease Burden**



Data source: HSCRC/CRISP

For certain measures, Maryland fares much better than the national average; for example, Maryland is ranked sixth in the nation for smoking (14.6 percent of adult Marylanders smoke).<sup>6,7</sup> While Maryland has significantly reduced the proportion of the population who smoke, other measures of underlying health suggest substantial room for improvement, especially in regard to the proportion of the adult population who are either overweight or obese (35.3 percent and 29.6 percent respectively).<sup>8</sup> On a composite level, the impact of unhealthy behaviors remains a concern in Maryland.

The Rankings measure a number of important health outcomes, such as preventable hospitalizations and premature death. The Rankings also provide a broad picture of state performance in underlying determinants of health status. These include risk factors and social determinants such as smoking, obesity, air pollution, immunizations and children living in poverty. The Rankings found that Maryland residents rank only slightly better than the national median on unhealthy behaviors, which include smoking, physical inactivity, excessive drinking, obesity, and insufficient sleep. Higher risk behaviors were disproportionately reported by Marylanders who were either less-educated or reported a lower-socioeconomic standing.<sup>9</sup>

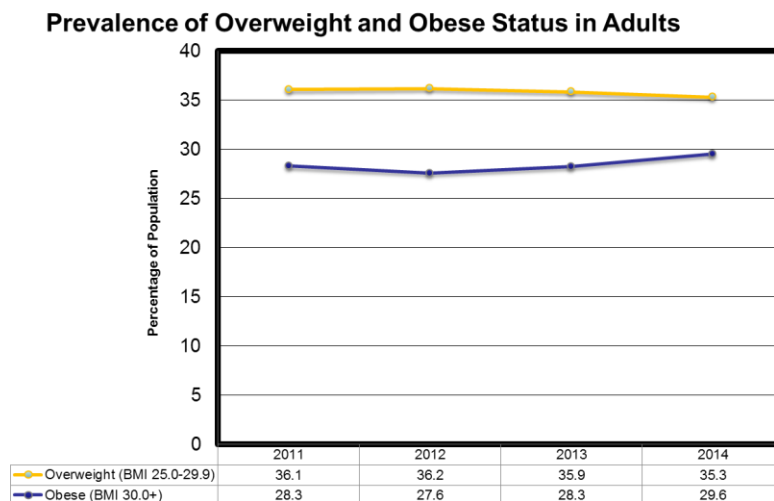
<sup>6</sup> CDC, 2016, Early Release of Selected Estimates Based on Data From the National Health Interview Survey, 2015, [http://www.cdc.gov/nchs/data/nhis/earlyrelease/earlyrelease201605\\_08.pdf](http://www.cdc.gov/nchs/data/nhis/earlyrelease/earlyrelease201605_08.pdf)

<sup>7</sup> Campaign for Tobacco-free kids, 2015. <https://www.tobaccofreekids.org/research/factsheets/pdf/0176.pdf>

<sup>8</sup> CDC, 2014, BRFSS Prevalence and Trends Data, [http://nccd.cdc.gov/BRFSSPrevalence/rdPage.aspx?rdReport=DPH\\_BRFSS.ExploreByTopic&isClass=CLASS14&isTopic=&isYear=2014&go=GO](http://nccd.cdc.gov/BRFSSPrevalence/rdPage.aspx?rdReport=DPH_BRFSS.ExploreByTopic&isClass=CLASS14&isTopic=&isYear=2014&go=GO)

<sup>9</sup> America's Health Rankings. Spotlight: Impact of Unhealthy Behaviors. 2014. Maryland <http://assets.americashealthrankings.org/app/uploads/finalreport-spotlightunhealthybehaviors-4-apr-2016-1.pdf>

**Figure 1-2. Proportion of Maryland Population Who Are Either Overweight or Obese According to the Behavioral Risk Factor Surveillance System (BRFSS)**



## Chronic Conditions

Marylanders' lives are adversely affected by a number of chronic conditions that not only reduce the length and quality of life but also drive up the cost of health care across the State. The top four chronic health conditions that contribute the most to poor health outcomes in the State include: hypertension,

<b>Disease</b>	<b>National Ranking</b>	<b>Adult Prevalence (2014)</b>
Asthma	24	13.5%
COPD	19	5.8%
Diabetes	28	10.1%
Hypertension	31	32.8%
Heart Disease	4	3.2%
Depression	7	15.9%

*\* Data source: BRFSS*

diabetes, asthma and Chronic Obstructive Pulmonary Disease (COPD) (see Table 1-3). Given the burden on the population that these conditions pose from both a clinical and economic perspective, reducing the impact of these conditions on Marylanders is a top priority for the State in transforming health care.

## State Health Improvement Process

The State Health Improvement Process (SHIP) is both an approach to improving health outcomes at State and local levels as well as a robust public health measurement system.

Under SHIP, the State monitors 39 measures of population health pegged to Healthy People 2020 goals. These measures are calculated at both the State and jurisdiction levels and disaggregated by race and ethnicity where possible. Baselines, targets and annual updates on these measures are provided to the State's 22 Local Health Improvement Coalitions (LHICs), who use this data to identify community health needs, set local priorities and develop action plans relevant to improving the health of their communities. DHMH meets regularly with the LHICs to discuss best practices on population health initiatives and provide technical assistance as needed. DHMH also publishes a weekly e-newsletter and



posts public health news on social media platforms. Increasing the capacity of SHIP to support the aims of the State's All-Payer Progression Plan was a key component of the work completed under Maryland's SIM project. (See Chapter 2 for a description of the Progression Plan and Chapter 3 for additional information on potential new measures for SHIP.)

# Chapter 2:

## Vision for Health System Transformation in Maryland—The All-Payer Model

---

On January 1, 2014, CMS approved the implementation of an All-Payer Model for Maryland. Discussed in further detail below, the All-Payer Model forms the foundation on which health system transformation is built in Maryland. The All-Payer Model is a progression from Maryland's successful hospital rate-setting system, which controlled the cost of hospital care in Maryland on a per-admission basis for almost forty years; the new model shifts toward value-based payment by holding hospitals accountable for the total cost of hospital care.

While the All-Payer Model has demonstrated impressive results to-date, its authorization stems from a five-year state demonstration whose terms and conditions drive Maryland to create further innovation, taking the total cost of care metric outside the hospital walls to encompass all health services during the next model term period, anticipated to start in 2019. During the first year of implementation, efforts focused on bringing Maryland's acute care hospitals under global budget revenue arrangements, focusing on person-centered interventions for reducing potentially-avoidable utilization and engaging stakeholders. The period of 2015-2016 centered on clinical improvement, care coordination, integration planning and infrastructure development, in addition to fostering partnerships and alignment across hospitals, other providers and community resources. During 2017-2018, Maryland will implement an amendment to the All-Payer Model Agreement (see "Care Redesign Amendment" below), further consumer engagement and progress toward the total cost of care model required for the next term of the All-Payer Model. Maryland has developed a Progression Plan that outlines its strategy toward that end.

### Maryland's Vision for Transformation

Maryland's vision is to achieve person-centered care, foster clinical innovation and excellence in care, and improve population health and moderate the growth in costs on a statewide basis and in the all-payer environment through the transformation of the health care delivery system.

As outlined in more detail below, Maryland plans to achieve its vision by working toward three key goals: (1) improve population health; (2) improve outcomes for individuals; and (3) control growth of total cost of care. These tenets are apparent throughout the entirety of Maryland's innovation plan.

#### **Goal 1: Improve population health**

- Ensure adequate access to appropriate community-based care to promote prevention and early detection of disease.
- Identify and provide additional resources (*e.g.*, increased access to care and team-based supports, effective coordinated treatment, medication management, behavioral health services, and other services) for individuals with complex and chronic conditions to slow disease progression.

- Address upstream influences on health status, including personal health behaviors, behavioral health issues and environmental factors, particularly for vulnerable populations.
- Address social determinants of health status and access to care through case management, resources from community organizations and public supports.

#### **Goal 2: Improve care outcomes for individuals**

- Enhance the delivery system's person-centered care approach. This approach tailors care based on individual needs and goals, engages patients and families in decision-making and educates patients and caregivers on appropriate care and recovery.
- Improve episodes of care, reaching beyond individual events. Person-centered care uses state-of-the-art health information tools to make better information available at the point-of-care and to coordinate care across the system.
- Increase supports for complex and chronically-ill patients to enable them to manage their conditions effectively in order to prevent avoidable utilization and complications of disease.
- Ensure adequate access to appropriate community-based services so that individuals with complex and chronic health issues, including behavioral health, can continue living and receiving care in the community.
- Improve coordination of care across settings, reducing re-visits, medication errors and negative health outcomes.
- Reduce health care-acquired conditions and complications of care.

#### **Goal 3: Control growth of total cost of care**

- Strive to achieve the first two goals (*i.e.*, improving population health and improving care outcomes), because the most effective strategy for reducing the need for high-cost settings and interventions is to keep people healthy and well-supported in the community.
- Provide an early and intense focus on fee-for-service (FFS) Medicare and dual eligible beneficiaries, since these populations are rapidly growing and have higher needs and underdeveloped supports.
- Transform and align payment and delivery systems around the core goals of improving outcomes and health and thereby support high-value care in appropriate settings.
- Support all types of providers in organizing to take increasing accountability for cost and care outcomes.
- Align public health and community organizations to provide chronic illness management supports that enable vulnerable individuals and their families to function safely in their homes and in the community.

### **The All-Payer Model**

The All-Payer Model Agreement requires the State to limit the annual growth in all-payer hospital per capita revenue for Maryland residents to the average growth in per capita gross state product (GSP) for the 2002-2012 period (a 3.58 percent growth rate). Over calendar year (CY) 2014, per capita revenue for Maryland residents rose 1.47 percent as compared to CY 2013 and by 2.31 percent between CYs 2014 and 2015.

The All-Payer Model also requires the State to achieve an aggregate savings in Medicare spending equal to or greater than \$330 million over the five years of the agreement. Savings are calculated by comparing the rate of increase in Medicare hospital payments per Maryland beneficiary to the national rate of increase in payments per beneficiary.

Approaching the end of the third calendar year, with results through the third quarter of calendar year 2016, Maryland met or exceeded the key Agreement measures for limiting hospital cost growth, while also improving quality. Despite unusually slow growth in national Medicare expenditures per beneficiary, Maryland has kept Medicare hospital and total cost per beneficiary growth below national levels since the Agreement's base year (CY 2013). In its first two years, relative to national growth, the Agreement saved Medicare \$251 million of the \$330 million in hospital costs that is required over the five-year demonstration. Through August 2016, Maryland estimates hospital savings of approximately \$178 million, bringing total hospital savings to an estimated \$429 million—exceeding the five-year savings requirement. Medicare hospital costs per beneficiary grew at a rate four percent lower in Maryland than the national growth rate from 2013 through August 2016. However, the 2016 figures contain estimates that could change, which could make results be less favorable for the remainder of 2016. At the same time, Maryland also kept the growth in hospital spending on an all-payer basis well below the ceilings established in the Agreement, which were tied to the long-term growth of the economy.

Despite these improvements in cost control and quality, Maryland is committed to developing and executing further innovations in all-payer payment and service delivery reform, as additional interventions have proven necessary. In CY 2015, non-hospital spending for Medicare rose faster in Maryland than in the nation, relative to the prior year. Some of the increases in non-hospital spending might be expected in transitioning care to lower-cost settings. While Maryland is ahead of its hospital savings requirements and its cumulative total Medicare spending per beneficiary growth rate is below the national trend since 2013, the non-hospital spending trend reinforces the need to increasingly focus on the total cost of care in the remaining years of the current term, as well as the second term of the Agreement, due to begin in 2019. As Maryland moves forward during this first phase of the All-Payer Model, it will continue to apply available levers to decrease potentially-avoidable utilization (PAU), which is seen as the primary driver for improving care and decreasing costs.

### **Global Budget Revenue: An Effective Lever for Transformation**

The HSCRC employs several policy levers to incentivize attainment of the cost and quality targets under the model, while still leaving the hospitals flexibility for innovation. Hospitals are not paid a set fee per procedure or encounter by payers like Medicaid, Medicaid managed care organizations or any other payers. Rather, hospitals under the All-Payer Model receive a fixed global budget, where hospital revenue is capped for inpatient and outpatient services. Under this system, hospitals have a financial interest to reduce potentially-avoidable utilization and to improve health outcomes for all populations. On a yearly basis, the HSCRC—with extensive stakeholder input—develops an update to the Global Budget Revenue (GBR) formula, in essence, setting the annual fiscal year budget for the hospitals that are governed by GBRs. The update takes into account all sources of revenue that contribute to the growth of hospital revenues in the state without causing a revenue increase above the 3.58 percent limit.

In addition to providing an annual cap on hospital revenue and thereby motivating hospitals to shift from volume- to value-based care, the GBRs also serve as a mechanism for investing funds for infrastructure to support health system transformation (*e.g.*, care coordination and population health initiatives) into the hospital budgets. In May 2015, Maryland awarded \$2.5 million to eight hospital-based regional partnerships to support the planning and development of various transformation efforts to address the health needs of the partnerships' populations. In addition, the State invested an extra 0.59 percent of revenue into rates across all hospitals in fiscal year (FY) 2016 to support the development of infrastructure initiatives to support transformation, with an additional 0.25 percent available through a competitive process.

Finally, the annual updates enable the HSCRC to adjust uncompensated care levels and quality policies. The All-Payer Model implements population-based and person-centered performance targets to drive quality of care and ensure population health improvement. Hospitals are required to demonstrate reductions in readmissions below the Medicare national average, and in preventable conditions under Maryland's Hospital-Acquired Conditions (MHAC) program, among other requirements.

### **Controlling the Total Cost of Care**

The development of the FY 2017 update factor is an example of how the GBR is an effective driver of transformation. During the development process, the HSCRC balanced the expected ability of hospitals to provide quality care with the need to address an observed increase in the total cost of care. The update provided an increase of 2.72 percent for revenues under global budgets, with 2.16 percent allocated for the first six months of FY 2017 and the remainder across the final six months. This approach represents a compromise between hospital concerns around financial solvency and the State's concerns around the increase in the total cost of care, which is one of the All-Payer Model's guardrails. Toward this end, the HSCRC employed its rate-setting authority to place stipulations around the mid-year additional inflation factor, encouraging hospitals to focus interventions around total cost of care monitoring, the implementation of programs focused on complex and high-needs patients and greater partnerships with physicians and post-acute and long-term care providers to receive the increased rate at mid-year.

Adjustment for trends stemming from reforms (*e.g.* the Patient Protection and Affordable Care Act (ACA), specifically, the decrease in the uncompensated care provision, which traditionally has supported hospitals facing bad debt and providing charity care) is another financial use case for the GBR. With the implementation of the Medicaid expansion and health benefit exchanges under the ACA in January 2014, the number of uninsured Marylanders who might have previously benefitted from charity care decreased. Within one year of the Medicaid expansion, uncompensated care dropped by 17 percent across the country, nearly all of which took place in states that opted to expand Medicaid, including Maryland.<sup>10</sup> This shift prompted the HSCRC to modify its approach to calculating uncompensated care from its previous, historical-facing model. In FY 2015, the uncompensated care provision, which is provided through the global budgets, decreased from 7.23 to 6.14 percent, followed by 5.25 percent in

---

<sup>10</sup> Cunningham P, Rudowitz R, Young K, Garfield R, Foutz J. (2016). Understanding Medicaid hospital payments and the impact of recent policy changes. Issue Brief—The Kaiser Commission on Medicaid and the Uninsured. Available <http://files.kff.org/attachment/issue-brief-understanding-medicaid-hospital-payments-and-the-impact-of-recent-policy-changes>; accessed 31 October 2016.

FY 2016. Under a continuously-evolving model, the uncompensated care provision in rates for FY 2017 was further lowered to 4.69 percent.

### **Improving Quality**

The inclusion of various quality programs in the All-Payer Model is key to the transition from volume-based to value-based reimbursement for health care. The HSCRC has created and maintains several quality programs that hold hospitals financially-responsible for quality improvement, including the Quality-Based Reimbursement program (QBR), the MHAC program, the Readmissions Reduction Incentive Program (RRIP), and the PAU Savings policy. These Maryland-specific programs exempt Maryland from federal Medicare quality-based programs, provided that Maryland holds a greater or equal amount of hospital revenue at-risk than the national Medicare programs. This approach provides Maryland hospitals and their partners the flexibility to customize their interventions to their local context, fostering more meaningful innovation.

One of the cornerstones of the All-Payer Model is the goal to reduce Maryland's hospital readmission rate to equal or below the national Medicare readmission rate by CY 2018, closing the gap by at least one-fifth annually. Prior to the implementation of the All-Payer Model, Maryland's readmission rate had been consistently higher than the national rate. Readmissions constitute a challenge to the provision of efficient care nationwide, generating substantial unnecessary costs and a lower quality of care for patients. With improvements to the coordination of care transitions and the quality of care overall, hospitals can take several actions to reduce readmissions.<sup>11</sup> For FY 2018, the Maryland's RRIP policy builds on the experience of previous years by adding an attainment measure. Going forward, hospital performance will be measured as the better of attainment or improvement. Developed jointly with stakeholders, this new approach, mitigates the concern that hospitals that started with especially low or high readmissions rates were being unfairly penalized or rewarded, based on their ease or difficulty in achieving the target improvement rate. The RRIP is implemented on an all-payer basis, whereas the national readmissions program—established by Section 3025 of the ACA—pertains to Medicare-only.

The PAU Savings policy previously calculated a proportion of the GBR as savings from expected readmissions reductions. To reflect the anticipated return on investment (ROI) from recent infrastructure investments for care coordination, care management and population health improvement—totaling nearly \$180 million (see the section below)—the PAU program shifted to incorporate ambulatory-sensitive conditions. Additionally, hospitals on the receiving end of readmissions and observation stays over 23 hours will be incorporated into the model. Hospitals are at increasing risk for PAU; for example, the FY 2017 program claims a 1.25 percent reduction in total revenue, which is a 0.65 percent further reduction over the previous year.

### **Improving Population Health and Transformation under the All-Payer Model**

The nature of Maryland's All-Payer Model encourages hospitals to look outside their walls and seek to collaborate with community partners and in some cases, other hospitals. The HSCRC has led the

---

<sup>11</sup> The Centers for Medicare and Medicaid Services. (2016.) The Hospital Readmissions Reductions Program. Available <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/HRRP/Hospital-Readmission-Reduction-Program.html>; accessed 1 November 2016.

development and implementation of several programs to support hospitals in this transition, including investing State and payer funds through hospital rates under the GBRs.

### *Infrastructure Investments*

In fiscal years 2014 and 2015, hospitals under GBR arrangements received over \$90 million to invest in infrastructure necessary to meet the goals outlined in Maryland's All-Payer Model, focusing on care transitions, coordination and case management. Overall, hospitals applied this funding in the following areas:

- Expanding case management and care transitions;
- Increasing access to non-hospital provider care;
- Removing barriers to social services necessary for improved population health;
- Promoting patient education; and
- Increasing post-discharge support and follow-up care.

The top categories of investments included the expansion of case management (15.8 percent of funds), information technology (IT) and data analysis (11.9 percent) and transitional care (11.4 percent), all interventions that are linked with reducing avoidable admissions and readmissions. Priority populations targeted under these interventions included high emergency department utilizers, Medicare patients, readmitted patients and patients with multiple chronic conditions. Under this program, hospitals will continue to invest in partnerships with external partners and initiatives with the aim of moving toward more integrated care delivery.

### *Regional Partnerships for Health System Transformation*

Maryland also leveraged the expertise of and partnerships between State agencies to foster health system transformation. With an investment from the State government, DHMH and the HSCRC held a competitive application process in 2015 for hospitals and non-hospital partners to establish consortia with a focus on analytics, targeted services based on patient and population needs, and care coordination and population health improvement approaches. The eight selected Regional Partnerships, which were geographically representative of Maryland, were required to submit interim and final reports detailing their plans for health system transformation in the following areas:

#### **Regional Partnerships: Scaling up care coordination through health information technology**

Each regional partnership was assigned a point of contact from Maryland's health information exchange, CRISP. The CRISP technical assistance providers supported the Regional Partnerships to understand the evolving legal and policy framework for data-sharing in the sharing of tools for care coordination, such as care plans, alerts and other patient-specific data.

- Goals, strategies, and outcomes for the partnership;
- Formal relationships through legal, policy, and governance structures;
- Data and analytic resources;
- Risk stratification, health risk assessments, care profiles, and care plans;
- Care coordination human resources, tools, process, and technology;
- Alignment of physicians and community providers;
- Organizational effectiveness tools;
- Care delivery models; and
- Financial sustainability.

These partnerships received technical assistance from the state-designated health information exchange (HIE), Chesapeake Regional Information System for our Patients (CRISP) and a specialized consulting firm. Regional Partnerships were considered eligible entities for Competitive Transformation Implementation grants (described in detail below); however, participation in a Regional Partnership was not a requirement to apply for a transformation implementation grant. Six of the nine Transformation Implementation grant awardees—Bay Area, Community Health Partnership, Howard County, Nexus Montgomery, Trivergent Health Alliance, and Upper Chesapeake—were also Regional Partnerships, furthering the progress of the State’s initial investment in their creation.

### ***Transformation Implementation Grants***

In addition, as noted earlier, the HSCRC earmarked up to 0.25 percent of FY 2017 revenue in the GBR system to support collaboration among hospitals and their community-based partners through a competitive transformation grants program. The grant program is intended to focus on particular patient populations (*e.g.*, Medicare patients with multiple chronic conditions and high-resource use, frail elders with support requirements and dually-eligible patients with high-resource needs). However, awarded projects can also include strategies for improving overall population health over the long-term, with particular attention paid to reducing risk factors, fostering partnerships and aligning providers to increase care coordination, with the ultimate aim of decreasing PAU.

Twenty-five hospitals, comprising nine partnerships, received awards in the first round of the funding allocation. These partnerships demonstrated a strong commitment to improving care coordination through innovative strategies, promoting population health, and reducing hospital utilization in their communities. In addition to producing savings, the program requires that the partnerships share a portion of their ROI with payers, who are supporting these investments through the GBR system. The ROI will be shared with payers by a 10 percent annual reduction in the award amount for the first three years, culminating in a 30 percent reduction from the original award amount by FY 2020. Table 2-1 provides an overview of the awarded partnerships, demonstrating the progress of Maryland hospitals in collaborating with traditional competitors to further health system transformation.

**Table 2-1. Competitive Transformation Implementation Awardees**

<b>Partnership Group Name</b>	<b>Region</b>	<b>Participating Hospitals</b>
Bay Area Transformation Partnership	Central	Anne Arundel Medical Center; UM Baltimore-Washington Medical Center
Community Health Partnership	Central (Baltimore City)	Johns Hopkins Hospital; Johns Hopkins - Bayview; MedStar Franklin Square; MedStar Harbor Hospital; Mercy Medical Center; Sinai Hospital
Greater Baltimore Medical Center	Central	Greater Baltimore Medical Center
Howard County Regional Partnership	Western	Howard County General Hospital
Nexus Montgomery	Capital	Holy Cross Hospital; Holy Cross-Germantown; MedStar Montgomery General; Shady Grove Medical Center; Suburban Hospital; Washington Adventist Hospital
Total Eldercare Collaborative	Central (Baltimore City)	MedStar Good Samaritan; MedStar Union Memorial
Trivergent Health Alliance	Western	Frederick Memorial Hospital; Meritus Medical Center; Western Maryland Hospital Center



Partnership Group Name	Region	Participating Hospitals
University of Maryland (UM) - St. Joseph	Central	UM St. Joseph Medical Center
Upper Chesapeake Health	Upper Eastern Shore	UM Harford Memorial Hospital; UM Upper Chesapeake Medical Center; Union Hospital of Cecil County

### ***Population Health Workforce Support for Disadvantaged Areas Program***

In FY 2017, an additional 0.06 percent of GBR revenue was included to fund a program that commits participating hospitals to train and hire workers from geographic areas of high economic disparities and unemployment. The program, which will be discussed in greater detail in Chapter 5, will stimulate jobs in the areas of care coordination, population health, health information exchange, health IT and consumer engagement.

The successful implementation of the All-Payer Model to date has relied on the ability of the model to adapt according to both hospital performance and the changing state and national health care landscape. While the guardrails stipulated in the Model Agreement remain static, the contractual requirement to submit a proposal for the next five-year period by the end of 2016 demands that the State be constantly looking forward, improving the current phase of the model and preparing it for the next phase.

### **Care Redesign Amendment**

Maryland stakeholders recognized that greater provider alignment and transformation tools are needed to better serve patients. The current All-Payer Model is similarly focused on strengthening and optimizing: 1) the chronic care provider-patient relationship, 2) care management for high-needs and complex patients and 3) care coordination among providers across the continuum of care. In response, the State proposed, and CMS approved, a Care Redesign Amendment (“Amendment”) to the Agreement in September 2016. The Amendment aims to modify the All-Payer Model by:

- Implementing effective care management and chronic care management;
- Incentivizing efforts to provide high-quality, efficient, and well-coordinated episodes of care; and
- Supporting hospitals’ ability, in collaboration with their non-hospital care partners, to monitor and control Medicare beneficiaries’ total cost of care growth.

The Amendment gives Maryland hospitals the opportunity to implement Care Redesign Programs intended to improve health outcomes. Care Redesign Programs will allow hospitals to access comprehensive Medicare data, share resources and offer incentives to community physicians and practitioners, physicians that practice at hospitals and other providers, collectively known as care partners. Maryland hospitals will be able to share incentives for these programs as long as care is improved, hospital-level total cost of care growth benchmarks are not exceeded, and other requirements are met. Hospitals and their care partners can leverage Medicare data for implementing, monitoring, and improving their Care Redesign Programs. Through the Amendment, Maryland hospitals can promote greater linkages with their non-hospital care partners on key goals of the All-Payer Model, including improving care management of complex and chronically-ill patients, improving episodes of care, enhancing population health and addressing the total cost of care. A portfolio of such programs

will be developed over time. Starting in CY 2017, hospitals can choose to participate in the first two Care Redesign Programs: the Hospital Care Improvement Program (HCIP) and the Complex and Chronic Care Improvement Program (CCIP).

## Hospital Care Improvement Program

The Hospital Care Improvement Program will be implemented by hospitals and physicians with privileges to practice at a hospital. The HCIP strives to improve the efficiency and quality of inpatient episodes of care by encouraging effective care transitions; encouraging the effective management of inpatient resources; and promoting decreases in potentially avoidable utilization. All of these efforts aim to improve quality and patient satisfaction and reduce costs per acute care admission.

### Care Redesign under HCIP: Example activities

- Care coordination and discharge planning
- Evidence-based practice support
- Patient safety practices
- Harm reduction, such as self-reporting adverse events
- Staff development, such as computerized physician order entry training, and
- Efficiency and cost-reduction

### Care Redesign under CCIP: Example activities

- *Care management:* Health Risk Assessments, care plans
- *Care coordination:* Discharge summaries, medication reconciliation
- *Community activities:* Services outside the traditional office setting

## Complex and Chronic Care Improvement Program

The Complex and Chronic Care Improvement Program is designed to provide incentives, shared resources and data for community-based providers to support high-value activities focused on patients with complex and rising needs, such as multiple chronic conditions. The CCIP will be implemented by hospitals in collaboration with community physicians and practitioners. The CCIP strives to link the hospitals' efforts in managing the care of current high-need patients with the primary care providers' efforts to care for the same populations, as well as patients with rising needs. The approach also aims to reduce potentially-avoidable utilization and facilitate overall practice transformation towards more person-centered care. The program ties resources from hospitals together with resources from Medicare payments to community-based providers and

practitioners to create a chronic medical home for high-need individuals.

The Amendment gives Maryland the flexibility to expand and refine Care Redesign Programs, based on outcomes, learnings and changing levels of sophistication of Maryland's health care system players, as well as the needs of health care consumers. The State will deploy a process by which providers and stakeholders make recommendations on enhancements to current programs or for the introduction of new programs to meet the unique needs of Maryland's patients, payers and health care providers. This flexibility also improves the State's responsiveness to external changes brought on by the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) and other new federal regulations and initiatives. Through this flexible framework, the Amendment will facilitate the State's ongoing progression towards addressing system-wide health care outcomes and costs.

## All-Payer Model Progression Plan

### **Sustaining Health System Transformation: Maryland's commitment to stakeholder engagement**

Maryland recognizes that the success of its health care innovations rests upon stakeholder buy-in. In addition to the influential Advisory Council, the Department and the HSCRC have convened stakeholder workgroups in the following areas since the enactment of the All-Payer Model:

- *HSCRC-led:* Advisory Council, Consumer Standing Advisory Committee, Payment Models, Performance Measurement, Data and Infrastructure (completed), Physician Alignment (completed)
- *Department-led:* Duals Care Delivery
- *Stakeholder-led:* Care Coordination (completed), Consumer Engagement & Outreach (completed)

While the initiatives encompassed under the current All-Payer Model are both ambitious and unique compared to other states across the country, the Agreement's signatories recognized, even prior to its implementation, that Maryland's innovative approach would be dynamic and evolving. The All-Payer Model Agreement with CMS calls for Maryland to submit its plan by December 31, 2016, describing how to extend the Model to limit the growth in total cost of care for Medicare beneficiaries in a second term that will begin on January 1, 2019. Accordingly, Maryland stakeholders have developed the Progression Plan ("the Plan"), which updates and advances Maryland's strategies to improve care and health outcomes, while limiting spending growth over time. The Plan outlines Maryland's proposal to accomplish the Model's expanded system-wide goals and address the State's goal of including the Medicaid costs for dual eligible beneficiaries. The Progression Plan has been submitted separately to CMS; this document provides summary of highlights from the Plan.

To support the development of the Progression Plan, the DHMH and HSCRC reconvened the Advisory Council.

Consisting of industry leaders representing hospitals and health systems, providers, payers, consumer advocates and other thought leaders, the Advisory Council played a crucial role in the successful rollout of the current All-Payer Model in late 2013 and early 2014. For its 2016 efforts, the Advisory Council membership was expanded to include representatives from the physician and long-term care communities, in a nod to the Agreement's model development requirement. With the Advisory Council, Maryland has committed to a set of common goals for the model:

- Reduce potentially-avoidable utilization;
- Improve quality and outcomes;
- Deliver person-centered care;
- Reduce spending growth;
- Maintain the All-Payer Hospital Model; and
- Align with non-hospital models.

The current All-Payer Model Agreement creates full accountability for hospital spending by including requirements for all-payer and Medicare hospital spending. The Progression Plan proposes to provide additional tools and structures for hospitals and their care partners to control the growth in the total cost of care, inclusive of both hospital and non-hospital spending.

As noted earlier, in CY 2015, non-hospital spending for Medicare rose faster in Maryland than in the nation, relative to the prior year. Some of the increases in non-hospital spending is expected in transitioning care to lower-cost settings. Even though Maryland is ahead of its savings requirements, the

non-hospital trend reinforces the need to focus on total cost of care in the remaining years of the current term, and the second term of the Agreement. The Plan lays out an approach that builds on the Model's early achievements by expanding transformation to include the continuum of providers, implementing new and better data and tools to support efforts and adding financial incentives, programs and accountabilities. Maintaining the pace of improvement under the Model will be challenging, since improvements will increasingly rely on complex delivery system transformation and coordinated efforts beyond hospitals.

Preserving the integrity of the current hospital model is critical to the ongoing success of Maryland's health care system. Each of the strategies proposed in the Progression Plan is designed to build on the current hospital model and work together to meet Maryland's objectives. Maryland's overall goal is to ensure that all Marylanders benefit from delivery system transformation through improved quality of care, better population health, and greater cost efficiency.

With its charge to affect Maryland's six million residents and over \$20 billion in annual health spending, the Progression Plan will engage all Maryland hospitals, physicians, other healthcare providers and payers in the ongoing work of improving the quality of care for all Marylanders. The Plan includes strategies that address all-payer hospital revenues, Medicare spending outside of hospitals and Medicaid costs for dual eligibles. The immediate implementation focus will be a targeted subset of approximately 800,000 Medicare FFS beneficiaries, many of whom would benefit from more robust care management structures. While the Progression Plan will start with a stronger focus on Medicare beneficiaries, including dual eligibles, the design process will also set the stage for applicability to all Maryland payers and all health care consumers, with expected improvements in outcomes and lower costs on an all-payer basis.

The Progression Plan organizes strategies under five main strategies:

- I. **Strategy One: Foster accountability** by organizing hospitals, physicians, and other providers to take accountability for groups of patients or populations within a geographic area. This effort will build on the hospital accountability already in place under the All-Payer Model and will be accomplished through the following strategies:
  1. Leverage existing provider and payer accountability structures;
  2. Implement local accountability for population health and Medicare total cost of care through a geographic value-based incentive; and
  3. Establish a Dual Eligible Accountable Care Organization (D- ACO) model.
- II. **Strategy Two: Align measures and incentives** for all providers with the goals of the Model. This will be accomplished via the following strategies:
  1. Reorient hospital measures to align with updated All-Payer Model goals;
  2. Align measures across the continuum of providers and programs;
  3. Engage physicians and other professionals by leveraging the incentives and requirements created by MACRA.
- III. **Strategy Three: Encourage and develop payment and delivery system transformation** to drive coordinated efforts and system-wide goals. This will be accomplished via the following strategies:

1. Develop a Maryland Comprehensive Primary Care Model;
2. Develop initiatives focused on post-acute and long-term care;
3. Explore initiatives to include additional physicians and providers and services in care transformation;
4. Improve the financing and organization of the behavioral health delivery system; and
5. Promote investments in innovation, technology, and education.

IV. **Strategy Four: Ensure availability of transformation tools** to support all types of providers in achieving transformation goals:

1. Enable and support the healthcare community to appropriately share data in order to improve care.

V. **Strategy Five: Devote resources to increasing consumer engagement**

1. Transform the health care delivery system with consumer-driven and person-centered approaches; and
2. Engage, educate, and activate patients, providers, and all stakeholders.

In addition to its foundation in those five strategies, the Progression Plan will be aligned with several guiding principles. First, Maryland must maintain the strong foundation of its existing hospital all-payer system. The core of the Progression Plan will continue the parameters around hospital per capita growth, which have demonstrated success across payers during the first two years of the All-Payer Model. Secondly, primary care must be strengthened to complement the existing hospital-based innovations as a fundamental element of delivery system reform. DHMH and HSCRC are working collaboratively with CMMI to develop a primary care model that will leverage federal payment reforms—namely, MACRA and Comprehensive Primary Care Plus (CPC+). The section below describes the Maryland Comprehensive Primary Care Model in additional detail. Third, Maryland views states as

**Leveraging Health IT for Progression Plan Implementation: Planning for Skilled Nursing Facility Connectivity**

Implementing a total cost of care model will require extending the tools offered by Maryland's robust health information exchange beyond the walls of the hospitals. Using SIM funds, Maryland conducted a study to develop a roadmap for connecting skilled nursing facilities (SNFs), including identification of key data elements for predictive analysis and an environmental scan of electronic health record use in SNFs.

an appropriate testing ground for new models and looks forward to continued collaboration with its federal partners regarding flexibility to develop and implement innovative programs. Also, in addition to leveraging MACRA through the Maryland Comprehensive Primary Care Model, Maryland must support physicians and align incentives by designing an All-Payer Model that qualifies as an Advanced Alternative Payment Model (APM). Finally, recognizing the potential long-term return on investment for preventive services, Maryland expects to monitor costs for preventive services separately, to not discourage providers from spending money for recommended services that will improve population health.

The importance of building flexibility into the development of the Progression Plan is underscored by the concurrent

development and implementation of other innovations on a national scale. While Maryland is exempt from many national Medicare requirements due to its unique rate-setting approach and now All-Payer Model, other reform efforts have been rolled out in Maryland both inside and outside the hospital

space, such as provider-based ACOs and payer-driven patient-centered medical homes (PCMHs). Maryland is taking into consideration the entire landscape of health care innovations, while recently keeping a keen eye on two proposed initiatives that have the potential to utilize available levers at the federal level to drive transformation.

## **MACRA**

Following the inception of the All-Payer Model Agreement, MACRA was enacted at the federal level and has created a new framework within which physicians and other providers can be encouraged and incentivized to embrace value-based care delivery. The MACRA Quality Payment Program combines multiple existing physician and hospital quality reporting programs into the Merit-Based Incentive Payment System (MIPS), while providing bonus payments for participation in APMs. Physicians accepting Medicare will either qualify as participants in Advanced APM entities or be subject to MIPS. Under MIPS, Part B payments to clinicians are automatically-adjusted based on a Composite Performance Score, receiving positive, negative or neutral adjustments in a budget-neutral system. Alternatively, qualifying Advanced APMs will receive a five percent lump sum bonus in 2019-2024, followed by a higher fee schedule updates in 2026.

The implementation of MACRA will have broad-reaching implications for Maryland. While the All-Payer Model exempts Maryland from certain national Medicare requirements, it also limits the State's participation in other innovative risk-shifting programs that have been tested in other states, such as the Bundled Payments for Care Improvement Initiative, which would otherwise serve to bridge the transition to risk-bearing under MACRA. Given these limitations, Maryland is working with CMS to determine if the All-Payer Model, in both current and future iterations, will qualify as an Advanced APM. Maryland's objective is to provide a pathway for all providers subject to this legislation to participate in the programs under the Progression Plan, through the creation of care improvement programs and updates to the GBR system. Recognizing that CMS only recently issued final regulations to implement MACRA, the Progression Plan includes preliminary concepts on how to accomplish this transition. Maryland will continue to work with CMS and stakeholders to develop and finalize its strategies.

## **Maryland Comprehensive Primary Care Model**

In alignment with the Progression Plan and the effort to development payment and delivery system transformation in Maryland, the State has initiated a strategy to enhance primary care delivery by designing the Maryland Comprehensive Primary Care Model. With its focus on hospitals, the All-Payer Model creates a foundation for payment and delivery transformation for all patients and payers. As Maryland moves to the second phase of the All-Payer Model in January 2019, providers will take on increased responsibility for health, care outcomes and total cost of care for Medicare FFS beneficiaries. Hospitals cannot accomplish this alone; the All-Payer Model must build in increased collaboration with non-hospital providers of care. The rapid aging of the population and related increase in the number of patients with chronic conditions spur transformation to begin as soon as possible.

Primary care that drives improved quality of care and population health is essential to meet the needs of chronically-ill patients, slow disease progression and prevent the need for higher-acuity care settings. However, many primary care settings lack the resources to meet the full range of needs of the growing number of patients with chronic conditions. Needed resources include care management, care coordination and connection to social services.

Maryland, equipped with experience and expertise in primary care transformation, proposes to borrow the attributes of the CPC+ advanced primary care model. This foundational payment and delivery system reform is designed to be interoperable with every fee-for-service accountability system. The CPC+ program offers primary care clinicians the opportunity to increase their focus on patient panel management and improved outcomes.

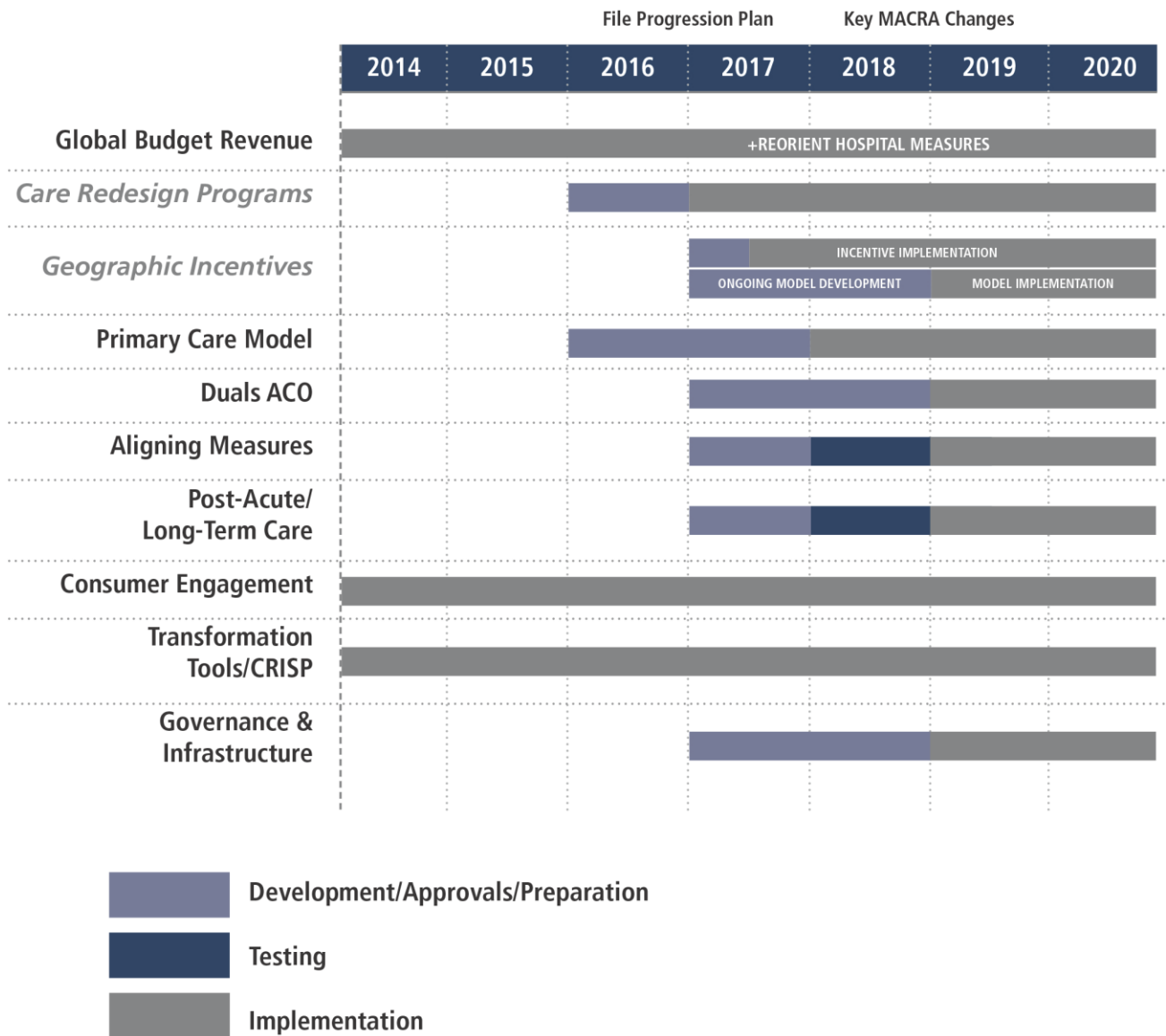
The goals of the Maryland Comprehensive Primary Care Model are consistent with the vision for All-Payer Model progression:

- Align community providers with hospitals and specialists to foster collaboration in the care of shared patients in order to reduce potentially avoidable utilization;
- Reduce the pool of high needs and super-utilizing patients through better management of the rising risk population to avoid the development of advanced disease;
- Move care to the safest, most appropriate and most cost-efficient care setting possible;
- Allow clinicians to assume greater overall responsibility for patient populations, thereby providing a path toward sustainability and success for the Maryland Comprehensive Primary Care Model and All-Payer Model;
- Identify and reduce disparities in care delivery and health outcomes; and
- Foster and implement innovations in health care delivery, including multidisciplinary integration of services.

Maryland is proposing two innovations to CPC+'s approach to primary care. First, Maryland is designing a set of Care Transformation Organizations. CTOs will provide care management resources, data tools and analytics, social service and hospital connections, infrastructure and technical assistance to PCHs. For example, practices would have access to technical assistance and advice to assist their patients, to include nurses, pharmacists, nutritionists, asthma educators, social workers and community health workers. Second, Maryland's model goes beyond traditional primary care providers, expanding to specialist and behavioral health providers who serve as the first source of care for a patient. These patient-designated providers would come from both traditional primary care and other specialties to reflect the preferences of patients, while ensuring the requirements of a fully-transformed, comprehensive practice devoted to all of the needs of the individual.

Redesigning primary care to achieve better overall population health outcomes, in concert with implementing the Care Redesign Amendment programs targeting the State's current high need patients, prepares hospitals for success in the second term of the All-Payer Model. This prepares primary care clinicians for success in the era of MACRA, and most importantly provides needed supports to Medicare patients. The Maryland Comprehensive Primary Care Model, in concert with the current All-Payer Model and the programs of the Care Redesign Amendment, will provide a landscape of aligned providers of care.

Figure 2-2. Illustration of Potential Milestones for Maryland Health System Transformation Activities





# Chapter 3:

## SIM Activities to Support Health System Transformation

---

The scope of activities for Maryland's State Innovation Model (SIM) Round Two design project focused on designing a Medicaid Integrated Delivery Network (IDN) for individuals dually-eligible for Medicaid and Medicare, studying skilled nursing facility (SNF) connectivity with the health information exchange (HIE) and designing new population health planning and measurement activities. (See Appendices A-E for additional detail on these project areas.) Maryland's approach to its SIM design grant reflects the State's unique delivery system as well as the status of two intertwined pathways to transformation that the State agreed to pursue with the federal government.

Maryland merged SIM planning activities with planning activities for the All-Payer Progression Plan so that the State would adopt a braided approach to health system transformation. SIM activities form part of the larger vision toward an all-payer health system transformation and were determined to be key initiatives by the State and its stakeholders during the previous SIM (Round One) design grant and the broader discussion surrounding the All-Payer Model agreement.

While Chapter 2 discussed Maryland's plan for progression toward the total cost of care, this chapter is focused on the major components of Maryland's Round Two SIM design grant.

### Duals Accountable Care Organization

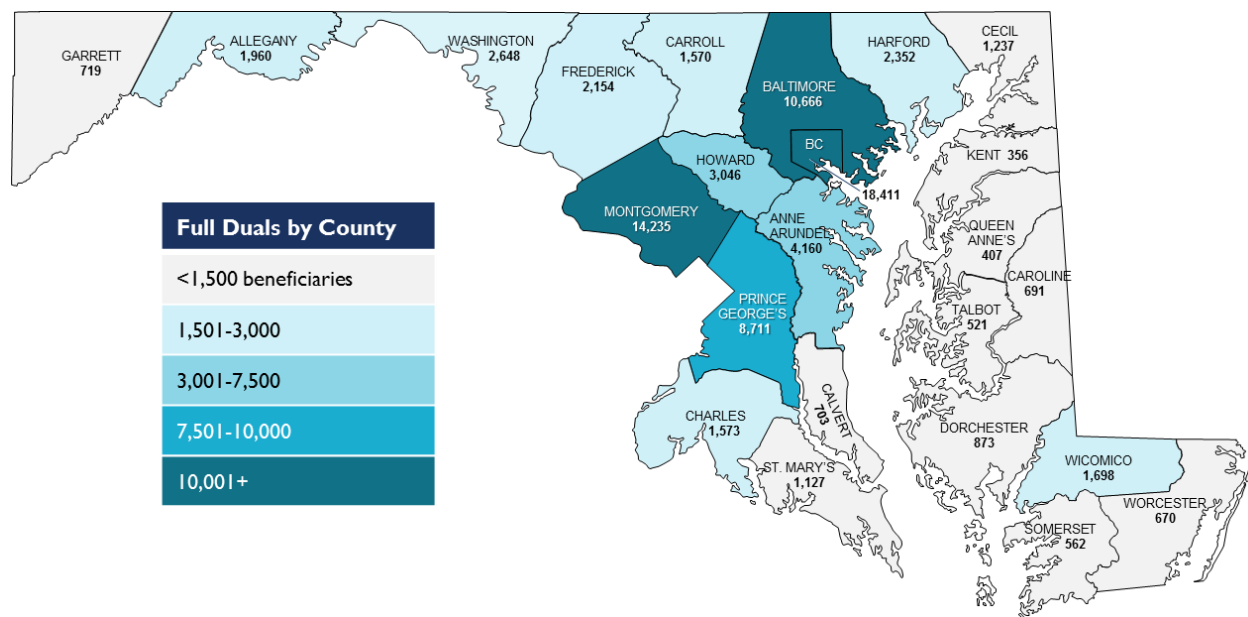
With SIM funding, the Department of Health and Mental Hygiene (DHMH) has begun designing an accountable care organization (Duals Accountable Care Organization, D-ACO) model of value-driven care coordination to serve as the IDN for Medicare-Medicaid dual eligible beneficiaries. The model is innovative, though it is built upon key elements of other established models including the Patient-Centered Medical Home (PCMH) and the Medicare Shared Savings Program (MSSP) ACO model. The model is a form of value-based purchasing, pursuing the benefits of provider accountability for cost and quality while emphasizing the centrality of primary care. This measure is fundamental to reducing the rate of growth of health spending in Maryland.

After the collaborative period of dialogue extending across the course of this SIM project, Maryland created an initial concept paper on the D-ACO model that was shared with stakeholders for public comment in December 2016. The following section is a summary of that initial concept paper. DHMH received numerous comments from interested stakeholders, and has begun to address the concepts by following up with stakeholders and considering the impact of comments on the initial design. DHMH plans to incorporate the comments into the concept paper in the beginning of 2017 with the intent to put out an updated concept paper for further public discussion.

With potential implementation of the D-ACO model to begin in 2019, DHMH will reconvene its stakeholder workgroup in 2017 and 2018 to focus on further design work, formal model and waiver development, and identification of potential entities to serve as D-ACOs. During this period, DHMH will revisit the updated concept paper and get further stakeholder buy-in and validation on an updated draft.

The initiative is intended to begin operating in 2019, initially in certain geographies—Baltimore City, Baltimore County, Montgomery County and Prince George’s County. These areas are home to approximately 52,000 Marylanders who receive both Medicare and full Medicaid benefits (full dual eligible beneficiaries) and who are not intellectually or developmentally disabled (I/DD). As of FY 2016, 81,362 full dual eligible beneficiaries, excluding the I/DD population, reside in Maryland. Approximately 10 percent of full dual eligible beneficiaries statewide are currently enrolled in Medicare Advantage plans and will not be affected by the D-ACO model. The four jurisdictions in which the proposed D-ACO model will operate are home to 64 percent of this population: Baltimore City (23 percent), Baltimore County (13 percent), Montgomery County (17.5 percent) and Prince George’s County (10.7 percent). Figure 3-1 displays the population density of full-benefit duals eligible by county.

**Figure 3-1. Full Duals by County, FY 2016**



The cornerstone of the care delivery redesign within the D-ACO is the Person-Centered Health Home (PCHH), which has similar functions to the Maryland Comprehensive Primary Care Model. The person-centered care redesign will be bolstered with payment innovations to incentivize the investments and behaviors needed to produce quality and cost-effective outcomes.

## Stakeholder Engagement

DHMH's stakeholder engagement activities were focused around designing a care delivery system for dual eligibles that would be compatible with the All-Payer Model. DHMH believes system transformation is best achieved through collaboration between DHMH and the individuals and organizations directly impacted by the changes.

As input from beneficiaries, providers and other vested groups is crucial for success, DHMH incorporated stakeholders' vision and input into the design of the model which ultimately became the D-ACO, other SIM grant activities and the broader vision of health system transformation.

DHMH's goals at the outset of the stakeholder engagement process were clear:

- Explain the purpose and future planning of the IDN and All-Payer Model Progression to stakeholders and the public;
- Provide forums for stakeholders to articulate feedback, suggestions, and concerns; and
- Incorporate stakeholder feedback into the design of IDN and the All-Payer Model Progression.

DHMH's stated goals were achieved across the nearly yearlong process. Additionally, with implementation slated for 2019 to coincide with the next phase of the All-Payer Model, the Duals Care Delivery Workgroup and other stakeholders will continue to be engaged and inputs considered over the next few years.

## Duals Care Delivery Workgroup

The Duals Care Delivery Workgroup (the "Duals Workgroup") met nine times between January and November 2016 to discuss the needs of the dual eligible population, develop options models for the IDN and provide feedback and input for DHMH's final proposed design. Additional meetings are planned beyond December 2016 as necessary—after the culmination of the SIM project—to draw on further stakeholder input as DHMH moves beyond the initial design phase.

The Duals Workgroup was made up of 26 members. DHMH and HSCRC solicited applications to serve on the Duals Workgroup in late November 2015. The stakeholders selected by DHMH for the Workgroup represented a wide variety of perspectives across the State of Maryland. Members included payer representatives, providers from a wide variety of backgrounds, dual eligible consumers, community advocates, local health officers, academic and policy professionals and state and local government officials. The members had subject matter expertise or experience in issues surrounding acute and long-term care, payment and delivery system reform and other pertinent areas. DHMH selected members that were geographically-diverse to ensure that areas across the state and perspectives from urban, suburban and rural populations were represented.

**Table 3-2. Membership of the Duals Care Delivery Workgroup**

Duals Care Delivery Workgroup Members	
<b>Danna Kauffman</b> Schwartz, Metz & Wise	<b>Ilene Rosenthal</b> Alzheimer Association, Maryland
<b>Matthew Celentano</b>	<b>Scott Rose</b>

Duals Care Delivery Workgroup Members	
Deputy Director, Maryland Health Care for All Coalition	CEO, Way Station Inc. / Sheppard Pratt Health Systems
<b>Lori Doyle</b> Public Policy Director, Community Behavioral Health Association of Maryland	<b>Adrienne Ellis</b> Director Healthcare Reform and Community Engagement, Mental Health Association of Maryland
<b>Fredia S. Wadley</b> Health Officer, Talbot County	<b>Judy Lapinski</b> COO, Mid-Atlantic Association of Community Health Centers
<b>Adam Kane</b> Senior Vice President, Corporate Affairs, Erickson Living	<b>Patrick Dooley</b> University of Maryland Medical System
<b>Robin Rivkind</b> Senior Director, Transformation and Reform, Johns Hopkins HealthCare LLC	<b>Dina Gordon</b> Deputy Secretary, Maryland Department of Aging
<b>Marie Grant</b> Director, Strategic Communications, CareFirst BlueCross BlueShield	<b>Debi Kuchka-Craig</b> Corporate Vice President, Managed Care, MedStar Health
<b>David Horrocks</b> President and CEO, CRISP	<b>Vicky Kent</b> Clinical Associate Professor, Department of Nursing, Towson University
<b>Joe DeMattos</b> President and CEO, Health Facilities Association of Maryland	<b>Vicki Walters</b> Executive Director, REACH Health Services Institutes for Behavior Resource
<b>Leah Hirsch</b> Government Relations, Executive Branch, Medicare, Anthem	<b>Mary Puckett</b> Clinical Care Coordinator, The Coordinating Center
<b>Dr. Scott Rifkin</b> CEO, Mid-Atlantic Healthcare	<b>Colleen George</b> Director of Center for Private Practice of Medicine, MedChi
<b>Dr. Niharika Khanna</b> Director, Maryland Learning Collaborative	<b>Jennifer Eastman</b> Director of Community Living Policy, Maryland Department of Disabilities
<b>Maansi Raswant</b> Director, Policy and Data Analytics, Maryland Hospital Association	

The Workgroup discussed different aspects necessary for the design of the ACO. Topics included payment models, enrollment strategies and attribution, among others. Consistent with the designation of the duals model as a cornerstone of the Progression Plan, the Duals Workgroup was also leveraged as a forum for sharing related initiatives, including the Maryland Comprehensive Primary Care Model and the Plan for Improving Population Health.

The Workgroup process began with a level set to convey Workgroup expectations and inform members of the current landscape of duals health care delivery in the State. To focus the Workgroup's efforts, stakeholders were presented with a number of potential delivery models to discuss as the basis for the Duals IDN. Workgroup discussion focused on the feasibility of three models: a managed fee-for-service (MFFS) health home model, a health plan that would feature managed long term services and supports (LTSS) and managed care, and the D-ACO model. The D-ACO model emerged as the optimal model for an integrated delivery network for dual eligibles.

The Workgroup process was focused, but creative solutions allowed the group to be responsive to State requests for broad and specific input, including the development of a working definition of care coordination. Working in a short timeframe, DHMH was able to convene a subgroup of expert stakeholders who were able to outline care coordination for the model. DHMH convened additional subgroups in the early fall of 2016 to focus on topic-specific priorities key to model development; the subgroups included Care Redesign, Risk and Data Exchange and Analytics.

Surveys were also utilized as a method of engaging Workgroup members and soliciting feedback. After months of discussion, Workgroup members were surveyed and asked to draft statements of support for their delivery model of choice. The survey allowed DHMH to identify many areas of common ground between stakeholders.

### D-ACO Program Theory of Change

The D-ACO model is designed to create a holistic, sustained care coordination intervention that bridges the divide between social determinants, long-term care, behavioral health and physical health by vesting the care coordination function in a single entity. The D-ACO model will financially join Medicare and Medicaid services. It further develops a unified and comprehensive assessment inclusive of common elements to address behavioral health, social services and long-term care, creating accountability and responsibility for that spend and linking its delivery to the delivery of traditional health care services in a care coordination program.

The D-ACO model transforms care delivery for dual eligibles by supporting each beneficiary with individualized care coordination and management to assure that their clinical and social needs are met. While this concept can be associated with fragmented care, the D-ACO model overcomes such challenges by adding the following elements: collaboration across specialties via medical homes, interdisciplinary care teams (ICTs) and care management that is integrated and delivered at the clinical setting. These elements are scientifically-validated mechanisms to ensure coordinated care, improved health outcomes and reductions in hospital admissions and emergency department visits.

Figure 3-3 explains the D-ACO model, which introduces care coordination along with incentives for providers to meet the needs of dual eligible beneficiaries while promoting efficiency and quality.

**Figure 3-3. D-ACO Theory of Change: Comparison of Current FFS System with D-ACO Model**

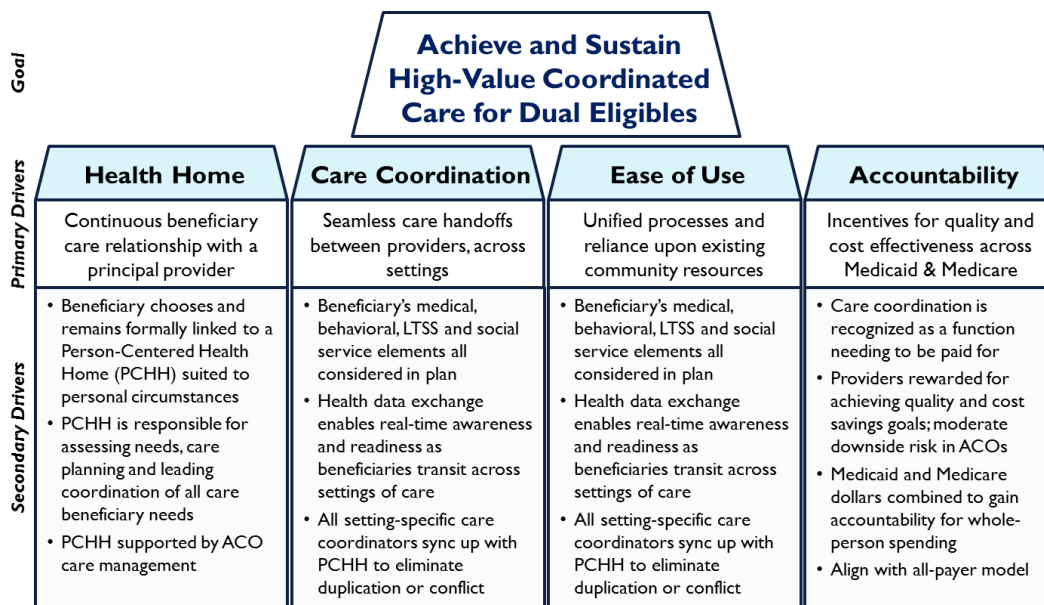
Current FFS System		D-ACO Model
Many beneficiaries lack a go-to provider	-----	Beneficiary-designated provider who is care coordination lead
Discontinuity in care, especially across physical, behavioral, LTSS and social domains	-----	Seamless coordination across health care settings and spanning to include social supports
Provider incentives reward volume and	-----	D-ACO materially accountable for total cost of Medicare- and

Current FFS System	D-ACO Model
intensity of services	Medicaid-covered care plus quality
Repetition of assessments, services, testing, procedures	<p>Care coordination tools enable access to data -- assessments, tests, medical encounters</p> <p>Promote standardized processes and assessments</p>
Lack of provider capacity to coordinate care	Incentivize providers and offer resources to coordinate care

The D-ACO model follows guiding principles that emanate from a goal of achieving and sustaining high-value coordinated care for dual eligible beneficiaries. As depicted in the driver diagram below, the D-ACO program will:

- Leverage the person-centered health home concept to ensure each beneficiary is connected and engaged to a designated provider;
- Implement new care coordination techniques in which key providers work across disciplines to address the beneficiary's needs; and
- Offer unified processes to reduce duplicative assessments, care plans and diagnostic tests; and
- Enforce accountability through carefully measuring both quality of care and the total cost of care.

**Figure 3-4. D-ACO Driver Diagram**



For beneficiaries, the model will improve beneficiary engagement, the experience of care, access to care, health outcomes, and quality of life. The model will align financial incentives across Medicare and Medicaid to reward higher quality of care and support providers via the exchange of health information and other vital data, analytical tools and administrative aids. Design elements that will serve to achieve the goal of achieving sustained, high-value, coordinated care include:

- A network of PCHHs capable of handling the care needs—including physical, behavioral, long term care and social supports—of dual eligible beneficiaries;
- Data infrastructure to inform D-ACOs and participating providers of clinical events and data analytics and reporting to inform practitioners about their performance and targeted approaches to engaging with and addressing the needs of beneficiaries;
- Individualized ICTs formed by a selected group of clinicians, social support resources and care managers to address the needs of the beneficiary and to guide the care planning process; and
- Care management and care coordination roles and functions that are the responsibility of the D-ACO.

The design will ensure that clinicians can also be credited for participating in Advanced Alternative Payment Models (Advanced APMs) under the Quality Payment Program created by the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).

### **D-ACO Care Model Design**

The D-ACO model will employ a shared savings and care coordination services payment system built upon rigorous care coordination model including support from and participation in state-operated data sharing programs.

Key characteristics of the D-ACO include:

- Have a broad network of primary and specialty providers representing all services dual eligible beneficiaries use—physical health, behavioral health and LTSS—that are traditionally covered Medicare and Medicaid benefits, as well as ways to connect beneficiaries to social supports and community services;
- Embrace and incorporate the PCHH model of care by performing care management and quality improvement activities, as well as assuring that effects are evaluated and measured;
- Support participating clinical practices to perform optimally by aiding in the process of care coordination and by supplying data and analytics, supporting not only clinical management and care coordination of their patient panel but also giving providers feedback in regard to their performance on defined process and outcome metrics—as well as how they performed in comparison to their peers;
- Ensure that providers representing services utilized by dual eligible beneficiaries are leveraged in care delivery policy-making and program operations, such as by reviewing and approving policies, overseeing case management functions, and engaging in discussions on specific beneficiary case examples; and
- Accept a minimum designation of at least 2,500 full dual beneficiaries.



In the first two years of the program, D-ACOs will have the opportunity to earn rewards for producing savings and quality gains for the beneficiaries they serve, and will be expected by the third year to take meaningful risk for financial losses that may arise.

D-ACOs will operate in regions with high concentrations of dual eligible beneficiaries and where conditions are favorable for D-ACOs to form—namely, areas that have the providers willing to form a D-ACO. Initially, the D-ACO initiative will focus on Baltimore City, Baltimore County, Montgomery County, and Prince George’s County—where more than three-fifths of all full dual eligible beneficiaries reside. The counties the initiative focuses on could be expanded upon based on the degree of provider engagement and success of the initiative. For instance, adding just the two neighboring counties of Anne Arundel and Howard would bring nearly 10 percent more of the population into the program.

D-ACOs may define their own service areas within the defined regions, provided those areas are contiguous and non-discriminatory. More than one D-ACO will be offered in all areas, to ensure competition between D-ACOs, to enable clinicians associated with competing health systems to engage and to ensure that most beneficiaries will continue to have access to current providers. However, DHMH expects to limit the total number of D-ACOs, in the interest of limiting the State’s administrative burden.

The D-ACO model will leverage existing MSSP ACOs that have formed to serve Medicare fee-for-service (FFS) beneficiaries generally. A large percent of current full Medicare-Medicaid dual eligible beneficiaries eligible for the D-ACO model are likely engaged in Medicare ACOs. Twenty-six MSSP ACOs have formed in Maryland, and some of them are also interested in becoming D-ACOs.<sup>12</sup> New ACOs may also form just to serve dual eligible beneficiaries; such D-ACOs will not be required to participate in MSSP to qualify as D-ACOs.

It will be to the advantage of the dual eligible beneficiaries and their families, given their diverse health and social concerns, for D-ACOs to differ in some ways CMS’s Medicare ACO definition. Mainly, D-ACOs are not limited to CMS’s MSSP definition of a primary care provider. It is especially important to give prominence to LTSS and behavioral care providers for the large numbers of dual eligible beneficiaries in need of those services. To qualify to serve dual eligible beneficiaries or to become a D-ACO, these entities will also have to demonstrate an understanding of dual eligible beneficiaries and their physical, behavioral, social and LTSS needs.

### **D-ACO Network Standards**

D-ACOs must furnish a network of providers with agreements for all services covered by Medicare Parts A and B, and by Maryland’s Medicaid program, including all long-term services and supports for the non-I/DD population as a way to collaboratively coordinate services. D-ACOs will be required to offer broad networks to include a diverse and large number of PCHs and specialists. D-ACOs will also be responsible for coordinating services when beneficiaries access care outside of the participating provider network.

---

<sup>12</sup> Based on CMS’s 2016 Medicare Shared Savings Program (MSSP) ACO programs available at: <https://www.cms.gov/medicare/medicare-fee-for-service-payment/sharedsavingsprogram/acos-in-your-state.html>.



Beneficiaries will either designate a D-ACO on their own or receive assistance from the State on D-ACO designation. The beneficiary designation process will be based on a methodology whereby beneficiaries will be connected with D-ACOs that offer the most suitable network for each individual based on historical utilization patterns and other factors. It will be in the best interest of the D-ACO to offer a network that is broad enough so that beneficiaries have access to a PCHH and complete network of participating specialists with whom they have a treatment history and geographic proximity.

### **Person-Centered Health Home**

The cornerstone of the model is a Person-Centered Health Home that will serve as the beneficiary's designated provider and constant care coordination resource.<sup>13</sup> The goal of the PCHH is to recognize the individual needs of the beneficiary and deliver integration of physical health, behavioral health, LTSS and social supports. The D-ACOs will support the PCHH with real-time data, beneficiary needs assessments and guidance on where best to target resources for the greatest impact. Owing to their complex array of needs, only a fraction of dual eligible beneficiaries use traditional primary care physicians as their principal source of care. Therefore, PCHHs will not be limited to traditional primary care providers; a behavioral health, specialty medical or long-term care provider that serves as the main source of care for a beneficiary may serve as the PCHH as well.

DHMH expects the PCHHs to meet standards of accreditation such as those applied to PCMHs set by national accreditation bodies, though some deviations may be warranted.<sup>14</sup> Person Centered Homes that will be created under the Maryland Comprehensive Primary Care Model could serve as PCHHs within D-ACOs, as long as they meet the requirements applicable to dual eligibles. While beneficiaries accessing services through existing programs will not be removed from these programs, policies will be further developed to ensure providers are unable to claim the already-covered service or care coordination and management activities of the D-ACO model.

The D-ACO is the entity that will hold a contract with CMS and DHMH. While PCHHs and all other providers will continue to receive fee-for-service payments, D-ACOs will also be required to compensate the PCHH entity for care coordination services and to share any awards received for achieving savings and quality goals with the PCHH and other participating providers. The model allows for variation in the level of financial and administrative support the D-ACO gives to each PCHH based on each practice's capacity for delivering care coordination functions. D-ACOs will be required to flow some of their income to PCHHs based on the extent of care coordination duties that is delegated to the PCHH practice.

### **Care Management and Coordination**

For the D-ACO model, DHMH and stakeholders have delineated the roles and definitions of care management and care coordination as follows:

---

<sup>13</sup> The PCHHs envisioned in this model are distinct from Maryland's chronic health homes authorized by Section 2703 of the Affordable Care Act. The latter will be eligible to apply to become PCHHs, though.

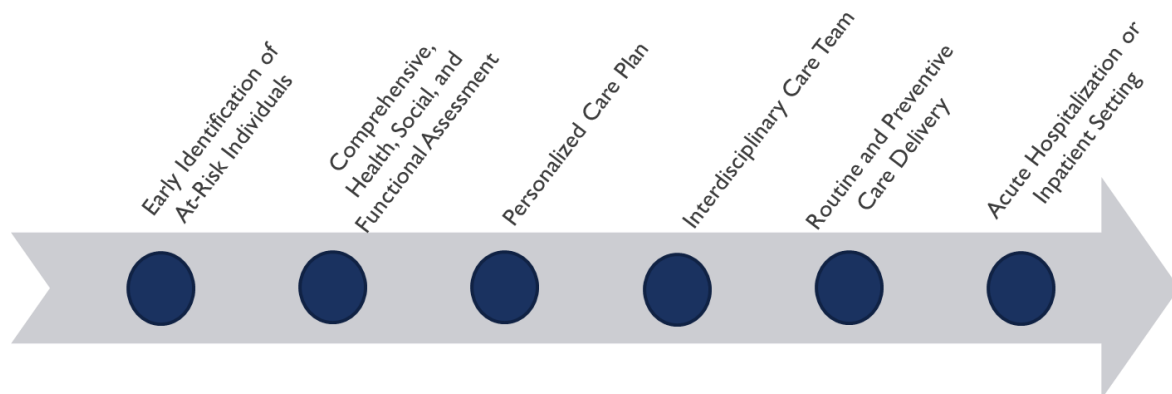
<sup>14</sup> The Patient Centered Medical Home (PCMH) concept is managed by the Agency for Healthcare Research and Quality, at a federal level. The National Committee on Quality Assurance (NCQA) and The Joint Commission are national, non-profit entities that set standards and perform accreditation.

- Care Management is a process designed to assist PCHHs and their support systems in managing their medical, social and behavioral health conditions more efficiently and effectively and as possible achieve self-direction and self-management; whereas
- Care Coordination is the tactical and operational organization of beneficiaries' care activities, including family caregivers; coordination will address the social determinants of health and facilitate the delivery of appropriate health care, long-term care and supportive social services.

To this end, the D-ACO model generally assumes the care management function to be carried out by the D-ACO and the care coordination responsibilities to be performed at the PCHH level. However, variation will be permitted. The core requirement is that the D-ACO be answerable for meeting the demands of the contract with Medicaid and Medicare. The care management and care coordination process will proceed along a structured timeline from beneficiary designation through ongoing support.

Figure 3-5 provides a visualization of how the care continuum could be designed to avoid negative and unintended outcomes, which are also addressed; the process for any individual may start at any point along the continuum, depending on each beneficiary's circumstances.

**Figure 3-5. Illustrative D-ACO/PCHH Care Continuum**



As displayed in the graphic, the care continuum could consist of a combination of the following, depending on the individualized needs of the person:

1. Early identification of risk for physical health and social needs often co-morbid to behavioral health deterioration and the onset of LTSS needs, informed and supported by data analytics;
2. Comprehensive medical, functional and social assessments, leaning on data analytics and leveraging information provided by existing assessments—for example, Minimum Data Set (MDS) and InterRAI—to reduce duplication and burden on the individual;

3. Personalized care plan, intended to be a living document developed in conjunction with the individual and his or her family or caretaker as appropriate and which will link to any other care plans already developed for the individual (*e.g.*, LTSS);
4. Individualized interdisciplinary care team, led by the PCHH care coordinators or D-ACO care managers and consisting of LTSS waiver program care coordinators, behavioral health specialists and other need-specific providers;
5. Routine and preventive care delivery, with PCHH care coordinators or D-ACO care managers leading the scheduling of appointments, coordinating access to services and connecting beneficiaries to appropriate resources;
6. Following up on acute hospitalization, leaning on health information technology (IT) tools such as encounter alerts to proactively coordinate care upon discharge.

Both the care coordinator and care manager will support beneficiaries to navigate the benefits and services that are available to them. Care coordinators are meant to serve as the vehicle to achieve decentralization of care coordination—collaborating between the beneficiary, care managers and care coordinators at the care delivery or practice level and the beneficiary’s designated primary provider. The D-ACO model assumes that transformation of care for dual eligible beneficiaries and improvements in the quality of care will occur thanks to the ICT approach, network cross-training, centralized member records, unified assessments and care plans and a community-driven care model.

## **Data Exchange and Infrastructure**

The data infrastructure component in this initiative is to foster real-time access to information about beneficiaries and their health and social needs. D-ACOs have two primary functions related to achieving this goal: 1) receive and share data about their beneficiaries, and 2) make the data meaningful and useful to engage with beneficiaries and their providers. Information on the beneficiary’s historical utilization patterns, assessments that have been conducted, behavioral health services assessed and more will give a good window into the needs of a beneficiary and in supporting the D-ACO efforts on care redesign.

The goal is to ultimately provide meaningful information in the hands of the PCHH and ICT to positively impact the care of the beneficiary. The centralized member record element, described below, aims to embody the concept of the PCHH by delivering the right information to the health home provider and various specialists and social supports providers.

### **Centralized Member Record**

Given the various interactions each beneficiary may encounter—across payers and settings—a critical aim of the D-ACO initiative is access to complete information about each beneficiary, ideally through a centralized member record. Beneficiaries may seek care at hospitals, physician offices or behavioral care clinics inside or outside a D-ACO’s network. These providers may have linked electronic health records, but such connectivity is not yet universal.

To address the lack of connectivity between settings and across payers, data infrastructure elements will address the following:

- Data exchange capabilities where all key providers can be notified in real time of critical events or concerns and all members of an ICT have access to the same information about the beneficiary;
- Data analytics to assess whether beneficiaries are getting the right type of care at the right time and to predict future health concerns; and
- Data platforms that focus on retrospective insight as well as on measuring and analyzing the performance of direct interventions, utilizing predictive analytics, and housing, maintaining and continually assessing care plans.

## Community-Driven Care Model

Social factors play a key role in the effectiveness of health care and in the individual's ability to maintain health. The D-ACO model may address social needs including family and personal connections, transportation, housing, nutrition and employment options to achieve positive health outcomes. D-ACOs will be responsible for engaging with community resources in meaningful ways, to help meet beneficiaries' health-related needs.

## Consumer Protections

As with any new approach to the provision of care, it will be vital to ensure that program participants are aware of the change, how it may affect their care and how they may seek support in the case of any issues or concerns after the model is implemented. D-ACOs will prioritize the inclusion of methods for consumer protections in the D-ACO model.

In addition to the extensive beneficiary counseling process described below, which is designed to maximize beneficiary choice and protect existing provider relationships, DHMH will develop a transition plan, focused on consumer education and outreach, to support D-ACO implementation.

The D-ACO model will also leverage existing processes available to beneficiaries, such as ombudsman programs, that are charged with giving a voice to consumers in addressing complaints or possible violations of rights. DHMH will also take into account the developments and recommendations of the newly-convened Consumer Standing Advisory Committee, which will consider consumer protections in light of new policies and initiatives.

## Beneficiary Designation to PCHHs and D-ACOs

A key element of the D-ACO program is the designation of Medicare-Medicaid beneficiaries to D-ACOs. The D-ACO program will employ a unique and innovative method of beneficiary designation that incorporates elements of the MSSP attribution process as well as the beneficiary

### Leveraging Existing Innovations: MSSP ACOs as D-ACOs

Established MSSP ACOs could become D-ACOs through a streamlined process, with the following requirements (among others):

- Proven ability to coordinate care across all Medicare- and Medicaid-covered services, as well as incorporate social services
- Sufficient no. of participating providers to serve at least 2,500 beneficiaries, including LTSS and behavioral health providers
- Detailed shared savings and loss distribution methodology

counseling and support functions employed for the Medicaid managed care enrollment.

A great advantage enjoyed by the D-ACO initiative, relative to MSSP, is the ability of a Medicaid program—granted proper authority—to mandate beneficiaries’ participation in managed care or care management programs. Maryland will use such a mechanism to prospectively link each beneficiary to a specific D-ACO; therefore, D-ACOs will know up front which beneficiaries they are responsible for. The proactive designation will allow for D-ACO functions to take hold instantly, as opposed to some waiting for the results of retroactive attribution.

The D-ACO designation will serve as the basis of many key operational elements, including the initiation of care planning and care coordination, the calculation of financial and quality benchmarks and the assessment of D-ACO quality and financial performance. However, unlike the attribution methodology used for MSSP ACOs, D-ACO designation will occur through a step-wise method that gives Medicare-Medicaid dual eligible beneficiaries affirmative choice in the selection of their D-ACO and PCHH.

The D-ACO designation process will entail outreach to the beneficiary before the effective date. There will be education and counseling to help beneficiaries make an informed PCHH and D-ACO selection. These innovations will ensure that dual eligible beneficiaries participating in the D-ACO program will be active participants in their own care planning and care management.

Careful consideration has been applied to the approach to beneficiary outreach, counseling and selection of PCHH and D-ACO. Outreach will be conducted in advance of proactive designation, with an emphasis on maintaining freedom of choice in an individual’s existing Medicare and Medicaid providers. The beneficiary counseling will start with the selection of a PCHH and will involve the discussion of the beneficiary’s options based on his or her primary providers, as identified by the data. If the beneficiary selects a PCHH that is exclusive to one D-ACO, the counseling is complete, but if the PCHH the beneficiary selects participates in two or more D-ACOs, the counseling continues to facilitate the selection of a D-ACO. Beneficiaries will be limited to their region. That means individuals in the northern region (Baltimore City and Baltimore County) will be precluded from electing a D-ACO that operates only in the southern region (Prince George’s County and Montgomery County) and vice versa. The beneficiary counseling will be culturally-, linguistically- and disability-competent.

## Financial Analysis

The D-ACO model will include an innovative array of financing devices to alter the incentive structure in the Medicaid and Medicare FFS system in Maryland to pay for value—involving a shared savings and shared loss approach that is comparable to the one employed by the MSSP ACO program (Tracks Two and Three). The D-ACO model will also include payment of a monthly care management fee similar to the approach used in many Medicaid Health Homes programs under Section 2703 of the Affordable Care Act. All providers will continue to receive regular Medicare and Medicaid fee-for-service payments for all services except for the Medicare chronic care management (CCM) fee,<sup>15</sup> which is envisioned to be

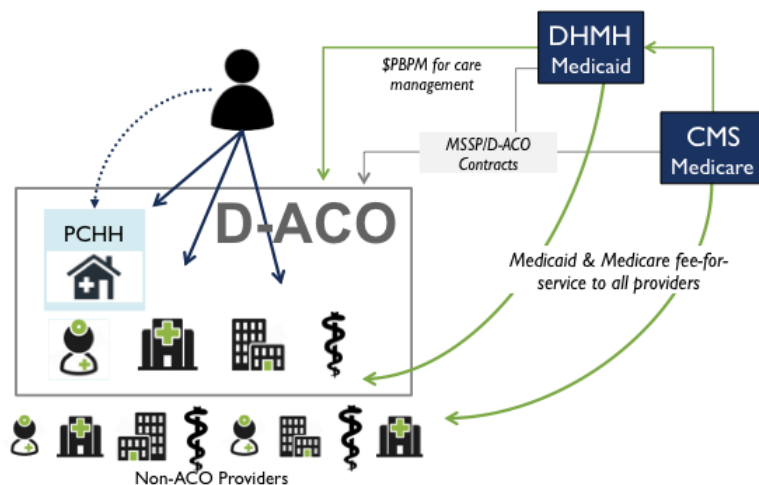
---

<sup>15</sup> Chronic Care Management: “At least 20 minutes of clinical staff time directed by a physician or other qualified health care professional, per calendar month.” CMS code 99490 – paid at \$42/month.

turned off for beneficiaries designated to a D-ACO and invested in the D-ACO care management fee (see Figure 3-6 for a visual depiction of D-ACO financial and interpersonal relationships).

This combination of financing for up-front care management plus access to the long-term incentive of shared savings is a unique innovation to this model. Moreover, starting in Year 3, D-ACOs will also face some risk of loss in the event their aligned beneficiaries' TCOC—combining Medicare and Medicaid spending—exceeds targets. However, that risk will be buffered against the consequences of so-called catastrophic cost outcomes that are largely beyond the control of front-line providers.

**Figure 3-6. Financial and Interpersonal Relationships within the D-ACO Model**



### Compensation for Care Coordination

An up-front management fee per beneficiary per month (PBPM) will ensure the availability of intensive care management and coordination services without regard to the timing or amount of shared savings. D-ACOs will be expected to show how the funding will be applied to care coordination and care management; they will not be allowed to divert the funding to other uses. D-ACOs will be expected to flow a portion of the care coordination payment down to participating PCHHs, but the determination of how much of the fee is distributed to any one PCHH will be left up to the D-ACO's discretion, based on the level of care coordination functions the PCHH is equipped to handle.

The PBPM payment will be tiered based on beneficiary risk stratification (driven by physical, behavioral, LTSS and social needs) as indicated by historical utilization data for population cohorts, not individuals. The payment to individual organizations may be adjusted where they are already receiving care coordination payments from different programs. DHHH estimates that the PBPM payment will equal no more than two percent of the TCOC per capita.

In addition, there will be a one-time payment of an enhanced fee for the completion of the initial care plan to compensate for higher outreach, engagement, assessment and care planning costs. This initial

care planning payment will be equal to two or three months' worth of ongoing PBPM (varying by risk tier) and will be made upon the submission of a successful encounter to DHMH for the complete initial care plan. Care coordination funds will be sourced from CMS, as allocated out of anticipated health cost savings from the model. Additionally, as with the monthly PBPM, CMS would move its normally-claimable Medicare CCM fees for designated Medicare-Medicaid dual eligible beneficiaries to this care coordination fund.

### **Rewards and Risks to Promote Value in D-ACOs**

D-ACOs will be subject to a reward and risk model having some similarities to the MSSP ACO program. This reward-risk overlay to the care management fee mechanism will ensure that D-ACOs have a strong incentive to make the care management process work effectively. A TCOC target will be established for each D-ACO's designated beneficiary population for the purpose of calculating savings or losses. This target will encompass all Medicaid spending and all Medicare parts A and B spending for affected beneficiaries.

### **Cost of Care Targets**

Upon a beneficiary's designation to a D-ACO, DHMH will credit a PBPM TCOC projection to a pool associated with that D-ACO. At end of the performance year, the actual TCOC will be calculated and compared to the TCOC target. The TCOC target is expected to be a blended PBPM amount for each D-ACO, which will need to consider adjustments for population mix, risk tier and differences in reimbursement.

Initially, D-ACOs will have the opportunity to earn rewards for producing both savings and meeting quality targets, but they will not be at risk for net deficits. Beginning in Year 3, downside risk will be added; however, the D-ACO reward-risk formula will be skewed more to incentive bonus than penalty. A tiered savings and loss methodology will be used to determine how the resulting savings or losses would be distributed between the State and D-ACOs. A D-ACO will be deemed eligible for an award if the savings and quality thresholds are reached. Failure to reach the minimum quality score or an expenditure deficit will result in a reduced award or the loss of the award. Figure 3-7 below presents a conceptual illustration of the reward-risk formula. To protect D-ACOs against the possibility that individual high-cost cases will lead to aggregate losses or deplete otherwise deserved savings, the model will include a specific stop-loss feature, including removal of outlier spending and a limit on monies owed after the implementation of downside risk.

**Figure 3-7. Conceptual Illustration of D-ACO Reward-Risk Formula**

		Losses (Yr. 3 & After)			Savings		
Actual Spend vs. Target:		> 5%	2 - 5%	0 - 2%	0 - 2%	2 - 5%	> 5%
D-ACO Quality Rating	Highest	20%	10%	0%	40%	50%	60%
	High	30%	20%	10%	30%	40%	50%
	Acceptable	40%	30%	20%	20%	30%	40%
	Less Than Acceptable	50%	40%	30%	0%	0%	0%

In years 1-2, a D-ACO has no downside risk; its share of any loss = 0%

Quality rating must be at least Acceptable for D-ACO to earn any savings award

A D-ACO will be obligated to distribute a meaningful portion of any award, or loss share, to participating providers—of all types—that contributed to the result. This would allow Medicare providers to potentially benefit from Medicaid savings and vice versa, under the theory that providers in one program may have an impact on the outcome of health for the other. Each D-ACO's shared savings distribution methodology will be subject to prior approval by DHMH, must be included in the participation agreements between participating providers and the D-ACO and must include provisions conditioning the distribution of savings based on the quality and level of per-patient contributions to the overall D-ACO performance. Precise formulas are still to be determined, with a key objective being to make sure that PCHHs will qualify as Advanced APMs under MACRA's Quality Payment Program.

### **D-ACO Financial Framework Model**

Over the course of Maryland's SIM process, DHMH developed a framework to assess the proposed D-ACO model. The purpose of this framework was to create a preliminary model of the projected cost savings associated with the proposed D-ACO that could be used once final details on the model design are completed.

### **Data Sources for Model**

A number of different data sources provided the basis for this analysis, including health care utilization, medical history and demographic information for each population of interest from both Medicare and Medicaid payer sources for claims incurred for dually-eligible beneficiaries in Maryland from CY 2012-2013. External benchmarks were used to ensure reasonableness and completeness of the data provided. Additional data reflected healthy system trends both nationally and locally including trends in the health care spend, as well as other factors that were reasonable to include.



### ***Modeling the Financial Framework***

Dual eligibles have specific medical, behavioral, care-coordination, and supportive needs. Stratification of groups may allow for many of these unique risk characteristics to be identified and segmented. Given that a number of factors can affect any projections of savings—such as changes in services, costs, program developments, and economic trends—the estimates of savings associated with the D-ACO are expected to be developed over the next year after further design work and could focus on subpopulations of dual eligibles.

A number of factors may impact the projections, including the impact of Medicaid’s Community First Choice program, differences in market drivers such as geographic differences in nursing home and inpatient per diem costs and changes in the experience of beneficiaries and their needs as reflected in their LTSS functional assessments, which are tied to reimbursement. In addition, the savings and costs estimates may change as more recent data become available. Finally, in developing financial estimates for the D-ACO initiative, it will be important to isolate savings for the D-ACO intervention from savings being achieved through other interventions already in place.

The services provided under the proposed D-ACO will improve outcomes while reducing costs and will be tailored to the beneficiaries needs. Several of the key elements of the D-ACO that will improve health outcomes while lowering costs include comprehensive medical, functional and social assessments from which a personalized care plan will be built and shared with care providers. These assessments, combined with the creation of the care plan, will allow for the early identification of risks for additional needs, as well as reduce duplication of procedures.

In addition, care coordination will assure that routine and preventative care is provided to beneficiaries, which will reduce costs by preventing new and worsening conditions from requiring care in the inpatient setting. Finally, if and when beneficiaries do require hospitalization, the level of care coordination proposed in the D-ACO assures that care providers can proactively coordinate care upon discharge, reducing the risk for re-admission and the onset of additional LTSS needs.

### **Monitoring and Evaluation—Quality Measurement**

As noted above, quality will be an important factor in the incentive formula. Rewards paid out for generating savings will increase to the extent that quality performance rises. Based on technical reporting requirements that DHMH will develop with input from CMS and stakeholders, DHMH will calculate quarterly and annual performance reports involving submissions of data from D-ACOs when necessary.

Furthermore, DHMH will regularly analyze process and outcome measures to assess for programmatic improvements and areas of deficiency, and to ensure the incentives do not inadvertently promote unintended results, such as reduced health outcomes or poor beneficiary experience. D-ACOs will be required to conduct similar analyses of metrics related to quality of care, process and outcome reporting for their PCHHs. Finally, the quality measures used for the shared savings calculation will also be evaluated to assess the effectiveness of the model.

Previous evaluation strategies, such as those conducted for CMS’s Financial Alignment Demonstrations, will inform the approach to evaluating the D-ACO model. Those evaluation strategies may be leveraged

for the Maryland model and would also allow the State and interested parties to potentially compare the Maryland models with similar models elsewhere using a similar framework for evaluation. The D-ACO model has no equivalent, but evaluations for Medicare ACOs may also serve as an applicable comparison.

## **Levers of Reform—Demonstration and Program Authority**

The D-ACO model was designed to leverage available federal authorities that allow for innovation in payment and service delivery reform; at the same time, DHMH also considered federal requirements from which it might request waivers.

First, the Center for Medicare and Medicaid Innovation (CMMI) is authorized under the authority at Section 1115A of the Social Security Act (“Act”) to “...test payment and service delivery models ...to determine the effect of applying such models under [Medicare and Medicaid].” This provision of the Act—which has been instrumental in health system transformation in Maryland and around the country—will be critical in lending authority to the innovations proposed by the D-ACO model. The Medicare portions of the D-ACO program will operate according to existing Medicare law, regulation and sub-regulatory guidance and will be subject to existing requirements for financial and program integrity, except to the extent these requirements are waived or modified. Such waivers are likely to include the same fraud and abuse waivers created to support the MSSP ACO program, including the Pre-Participation Waiver, Participation Waiver, Shared Savings Waiver, Compliance with Stark Law Waiver and the Patient Incentive Waiver.

As a program for individuals dually-eligible for Medicare and Medicaid, Maryland will also leverage Medicaid authority to support implementation of the D-ACO model. Similar to the Medicare context, the Medicaid elements of the D-ACO program will operate in accordance with existing federal and state Medicaid law and regulation, sub-regulatory guidance and existing requirements for financial and program integrity, except to the extent these requirements are waived specifically for this program. Maryland will submit State Plan Amendments (SPAs) or waivers for Medicaid services and implementation of the D-ACO program as necessary following discussion with CMS. Approval of D-ACO participation agreements will be contingent upon CMS approval of any necessary SPAs or waivers.

## **Skilled Nursing Facility Connectivity Study**

As part of Maryland’s SIM activities, DHMH partnered with CRISP and a number of stakeholders to develop a strategy to improve connectivity between hospitals and SNFs. This project has broad applicability to all of Maryland’s transformation efforts, including initiatives under the All-Payer Model, the D-ACO and population health activities, as many of the State’s initial planning efforts involve improving care coordination between hospitals and SNFs, as well as more broadly for the population at large. This project, termed the SNF Connectivity Study, has provided Maryland with a crucial understanding on how to design the optimal health information technology infrastructure to support transformation as well as analyze newly available data streams and newly-formed connections to improve health care outcomes while reducing costs. Implementing the outcomes of this project will expand upon Maryland’s strong HIE infrastructure that has existing connections to every acute care hospital in the State.

## Stakeholder Engagement

DHMH worked with a number of stakeholders, including representatives from CRISP, the HSCRC, the Hilltop Institute at the University of Maryland, Baltimore County (UMBC), the Johns Hopkins University Bloomberg School of Public Health, DHMH's Virtual Data Unit, clinicians, SNF providers and SNF electronic health record (EHR) vendors, as well as subject matter experts acting in the role of consultants to the project.

## State of Skilled Nursing Facility Connectivity

An essential partner in the process is CRISP, the State's designated HIE. As a non-profit multi-stakeholder membership organization, CRISP provides data analytic services throughout Maryland. CRISP operates a technical infrastructure with connectivity to a wide range of clinical data sources, including all Maryland hospitals, to facilitate the secure movement of patient-level clinical data to support treatment, care coordination and quality improvement purposes. Specifically, clinical data shared through CRISP includes admission and discharge encounter data, structured lab results, radiology reports, clinical documents such as discharge summaries and an increasing number of C-CDA (Consolidated-Clinical Document Architecture)-structured documents in the form of Continuity of Care Documents (CCD).

A 2014 survey by the Maryland Health Care Commission (MHCC) identified that SNFs in Maryland have significantly lower adoption rates of robust EHRs than providers who are eligible for the EHR Incentive Program.<sup>16</sup> Almost 72 percent of SNFs reported having adopted an EHR system; however, less than half of them reported that they used all eight functions of a basic SNF EHR that MHCC identified.<sup>17</sup> Twenty-eight percent of SNFs in Maryland had not adopted an EHR. Approximately 48 percent of SNFs had not used all the functions of a basic EHR. Vital signs, laboratory data, and activities of daily living were the most commonly cited functionalities not being used by SNFs.

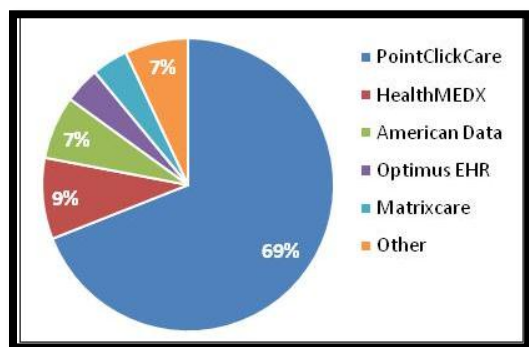
The survey also identified that five SNF health IT developers account for approximately 93 percent of the EHR systems deployed in Maryland SNFs with one accounting for 69 percent of the market (see Figure 3-8).

---

<sup>16</sup> MHCC (2016). *Comprehensive Care Facilities Adoption of Electronic Health Records: An Information Brief*. Retrieved from: [http://mhcc.maryland.gov/mhcc/pages/hit/hit/documents/HIT\\_LTC\\_Scan\\_Brief\\_2014.pdf](http://mhcc.maryland.gov/mhcc/pages/hit/hit/documents/HIT_LTC_Scan_Brief_2014.pdf)

<sup>17</sup> The eight functions are: assessment (other than the minimum data set); demographic information; activities of daily living; diagnostic related information; allergy list; vital signs; laboratory data; and discharge summaries.

**Figure 3-8. SNF Health IT Developer Market Share (N=55)**



As of June 2016, 64 of the 229 skilled nursing facilities in Maryland were providing data to CRISP. All of these facilities share at least encounter information. Only five of the facilities shared additional clinical data with CRISP. Based on experience to date, SNF health IT developers' ability to capture and export clinical data was significantly behind the capabilities of health IT developers serving the ambulatory and inpatient markets that have been driven by the EHR Incentive Program.<sup>18</sup>

Also as of June 2016, 74 long-term post-acute care (LTPAC) facilities had access to the CRISP's Clinical Query Portal, and 49 received admission-discharge-transfer (ADT) alerts. LTPAC facilities logged 116 queries for patient information from the Clinical Query Portal, with over 3,466 encounter alerts sent to subscribing LTPAC facilities in June (see Table 3-9).

**Table 3-9: LTPAC Facility Connectivity and Access to CRISP**

<b>Total LTPAC facilities with live access to Clinical Portal as of June 2016</b>	<b>74</b>
Number of Queries by LTPAC Facilities in June 2016	116
Total LTPAC Facilities live on ENS as of June 2016	49
Number of encounter notification received by LTPAC Facilities in June 2016	3,466
LTPAC Facilities Sending Encounter Data to CRISP	64
LTPAC Facilities Sending Other Clinical Data to CRISP	5

### SNF Connectivity Workplan

The activities undertaken as part of the SNF Connectivity Study supported the production of detailed technical approaches and a roadmap for future endeavors to increase SNF connectivity. Three phases of work were carried out under this project, including: 1) examining current EHRs used by SNFs to identify fields necessary to successfully inform care coordination; 2) analyzing data sets, vendors, software and hardware used by SNFs to identify best practices and practical approaches for HIE connectivity; and 3)

<sup>18</sup> For instance, when SNF health IT developers are able to produce a care summary record (i.e. a continuity of care document (CCD)) the included data fields are limited compared to ambulatory and inpatient health IT developers.

developing a connectivity roadmap that identifies best practices for EHR fields, connectivity opportunities and potential sites for adoption.

The first phase of the project focused on a planning effort to identify and evaluate key data elements, document formats and secure transport approaches that would be most impactful and implementable to improving care coordination along the continuum of care between hospitals and SNFs. In essence, this first stage served to identify the relevant clinical data that SNFs could provide to the HIE to support the coordination of care and maximize the benefit to patients.

The second phase focused on identifying and evaluating the necessary factors to enable potential future engagement of sites. This phase's activities paralleled the process utilized to establish meaningful connectivity with EHRs with Maryland's hospitals. To fully incorporate the potential care coordination use cases of connecting SNFs to the HIE—such as sharing care plans—it was critical to determine the information that the 232 Maryland SNFs are already producing in EHRs. It was also essential to determine the types of data that hospitals could be providing to SNFs in order to improve the care-provision and coordination process. Activities in this phase included meeting with SNFs, their different EHR vendors and subject matter experts including former ONC<sup>19</sup> LTPAC Challenge Grant recipients and other HIEs currently leveraging SNF data in HIEs, to determine the necessary logistics to connect all Maryland SNFs. CRISP also spoke with various stakeholders in the acute care setting to determine the types of data sharing (SNF-to-hospital and vice versa) that would improve care coordination.

Stakeholders identified two categories of needs to support improving care coordination between hospitals and SNFs. First, stakeholders identified a variety of data that they do not currently receive that would support the treatment of patients at the point of care. SNFs identified the following sets of information that hospitals could provide that would improve care coordination and provision efforts: diagnosis and chief complaint, timely discharge summaries, accurately-reconciled medication lists, current prescriptions for medications and other services, completed and accurate INTERACT forms, and advanced directives. SNFs also identified several new potential use cases of interest for this data including the creation of something similar to the care alert for SNFs sending a patient to the hospital. This alert would include valuable clinical information and a description of why the patient was sent to the hospital and what the hospital needs to do in order for the patient to be safely readmitted to the SNF.

Hospitals identified a number of additional pieces of data that would support care-coordination transformation including encounter information, laboratory values, medications, location and severity of pressure ulcers, presence and type of infectious agents and discharge summaries. Hospitals also envisioned new case uses of interest for these data such as:

1. Reporting to hospitals upon discharge of a patient from a nursing home regarding where that patient will be discharged to and the types of wrap-around services that have been put in place to support a successful return to the community; and
2. Developing a method for tracking patient progress and trajectory in the SNF to determine if their risk for readmission had changed since the patient was discharged from the hospital.

---

<sup>19</sup> Office of the National Coordinator for Health Information Technology

These use cases would allow additional levels of care coordination supporting the aims of the All-Payer Model, the D-ACO model and population health activities.

Stakeholders also identified a number of reports that would support their population health management efforts. In the coming years, CRISP will work with DHMH, SNFs, the HSCRC and hospitals to address these data and reporting needs. SNFs and hospitals identified the following common reporting needs:

- Average length of stay;
- Admission rate;
- 30-day readmission rate;
- ED visits; and
- Hospital utilization or admissions by primary diagnosis.

In addition to commonly-identified needs, hospitals also put forth the following reporting needs:

- Total cost of care per SNF; and
- Average cost per day per patient.

## Connectivity Roadmap

Arising in part from the SNF Connectivity Study, the State created a connectivity roadmap to plan for all SNFs in Maryland to connect to CRISP. The strategy recognizes and addresses the varying marketplace factors (*i.e.*, competitive versus non-competitive regions), the lack of EHR adoption in some facilities, the varying capabilities of EHRs that SNFs have adopted and financial barriers to HIE participation.

Based on experience connecting SNFs to-date and through conversations with stakeholders, the following five steps were identified as essential components to the roadmap:

1. SNF Connectivity Program;
2. Connect SNF Ancillary Vendors;
3. Leverage MDS Data in CRISP;
4. SNF Engagement and Learning Efforts; and
5. Expand Clinical and Reporting Infrastructure to Support Hospital/SNF Care Coordination Needs.

Combined, these steps provide a strategic path forward for CRISP to receive data from— and provide access to the Clinical Query Portal to—all SNFs in the State. Work has already begun on several components of this roadmap with state funds and will be continued and expanded, while others may be implemented in the coming year. Each component is outlined in more detail in the following section.

### *SNF Connectivity Program*

Ambulatory connectivity is essential to support the bi-directional sharing of health care information, enabling the coordination of care and the establishment of a true patient-centered medical home. Linking SNFs with the HIE presents a prime opportunity to improve care coordination and transitions of care, leading to improved health outcomes and quality of life as well as lower costs through decreases in potentially-avoidable utilization.

An option to increase connectivity would be to establish a SNF Data Exchange Support Program that would help offset the cost burden faced by SNFs when initially connecting to CRISP. To connect their EHRs to CRISP, SNFs have to pay an interface or integration fee to their health IT developer and then face ongoing maintenance costs. These fees often present a financial barrier to SNFs' ability to share data with CRISP.

CRISP would prioritize the selection of eligible SNFs through the program based on a number of potential factors including but not limited to: readiness and willingness of the SNF to connect, technical integration capabilities of the SNF's EHR vendor, the EHR vendor's market share, and participation in priority health reform efforts (*e.g.*, Regional Partnerships). Most SNFs in the state should be eligible to participate in the connectivity program. To ensure that funding is well spent, payments under the program could be tied to achieving set milestones.

### *Connecting SNF Ancillary Vendors*

To address the lack of electronic data available from SNFs without EHRs and to supplement the electronic data available from SNFs that have adopted EHRs, CRISP will increase efforts to connect SNF ancillary vendors—including institutional pharmacies, laboratories, and radiology.<sup>20</sup> Directly engaging ancillary vendors will help to create a common baseline set of electronic data available in CRISP for all SNF and NF residents in the State regardless of a given SNF's level of connectivity. CRISP has successfully implemented a similar strategy with the laboratory and radiology vendors serving ambulatory and inpatient providers. Strengthening connectivity with institutional pharmacy vendors in 2017 will be CRISP's first priority under this component of the roadmap. Vendor priorities will be evaluated and updated depending on the needs of the State and market factors.

### *Leverage MDS Data in CRISP*

The SNF Connectivity Study determined that the data generated as part each SNF and NF resident's Minimum Data Set (MDS) assessment could be leveraged to improve health outcomes in a number of innovative ways. This 400+-item assessment is conducted for each resident of nursing homes during regular intervals throughout their stay and measures cognitive and physical functions, risks for infections or falls, as well as numerous other patient-level variables. It is used to create plans of care and bill for services.

When an MDS assessment is completed, it is sent to CMS for validation. Through the current data sharing and storage mechanisms in place in Maryland, all of the MDS data transmitted to CMS from SNFs is stored at the Hilltop Institute. This puts Maryland at a significant advantage compared to other states attempting to leverage this data to transform health care, as CRISP will only have to form one connection with Hilltop to access these data, as opposed to creating individual connections with each SNF.

In addition, Maryland is an opt-out state, meaning that unless a SNF or NF resident specifically requests not to have their data shared via CRISP, these records would be available. As with any data set, there are

---

<sup>20</sup> For example, three institutional pharmacy vendors, Omnicare, PharMerica, and Remedi Senior Care, serve the majority of SNFs in Maryland. Connecting these three vendors would provide access to dispensed medication information from the majority of SNFs in the state.

limitations to the MDS. For example, it does not capture medication regimens, laboratory results, vital signs or results of off-site procedures. To realize the full benefit of integrating MDS data into the HIE, Maryland will have to perform additional work to determine: 1) the other data sets and ancillary providers that will need to be integrated in the future; and 2) a process for integrating these data as well as implementation of this plan. These databases might include additional connectivity with SNF EHRs and medication administration record systems, among others.

DHMH has the ability to provide CRISP with centralized access to MDS data from all SNFs in the State. Similar to data from SNF ancillary vendors, MDS data will help provide a baseline level of data for each SNF and NF resident regardless of facility-level connectivity. Over the course of the SNF Connectivity Study, CRISP evaluated several avenues for leveraging MDS data in the future including: 1) improving point-of-care treatment; 2) increasing the capacity to plan and manage care; 3) evaluating the impact of initiatives on preventing avoidable use of acute care; and 4) to support reporting use cases.

In discussions with stakeholders, CRISP heard differing perspectives on the utility of MDS data for treatment use cases. Some types of providers expressed an interest in having the capacity to access MDS data at the point-of-care, while others felt the data would not meaningfully improve their capacity to provide care. Several HIEs in other states have recently started or are in the process of launching pilot efforts to provide a subset of MDS data elements to providers, but these pilots have yet to provide informative results. To test the value of MDS data for providers in a variety of settings at the point-of-care, CRISP will launch a pilot initiative (funded under a separate project) with SNFs, hospitals and ambulatory providers. The results of the pilot will inform both the nature and direction of the process moving forward.

### **SNF Engagement and Learning Efforts**

CRISP has significantly increased its outreach efforts to SNFs in Maryland. To this end, CRISP entered into a partnership with the LifeSpan Network, a Maryland association of LTPAC providers, to provide boots-on-the-ground outreach and education to their SNF members. This partnership supports CRISP's efforts to educate SNFs about the benefits of connecting to the HIE, recruit SNFs to become connected to CRISP; and create a feedback loop for CRISP regarding service improvements to support SNF needs. Leveraging internal staff and key partners such as LifeSpan, CRISP will continue its dedicated outreach, education, and onboarding work over the course of the next several years with the aim of connecting every SNF in the State to the HIE.

In addition to continuing and expanding existing engagement and onboarding efforts, CRISP will establish a learning network for SNFs connected to CRISP. This learning network will identify and disseminate best practices regarding how to optimally integrate the information available in CRISP into the workflow, as well as leverage this information to improve care.

### **Expand Clinical and Reporting Infrastructure to Support Hospital and SNF Care Coordination Needs**

Through funding resulting from other initiatives, CRISP is currently launching a pilot effort with SNFs to test an initial set of patient-level, panel-based reports that will be made available to SNFs. Although this work is funded separately, it dovetails with the aforementioned aims. CRISP is also working to create reports based on Medicare claims data that will provide detailed episode-based reports for hospitals and SNFs in the State. These reports will include many of the specific items hospitals and SNFs expressed



interested in tracking including: readmission rate, average length of stay, and TCOC. CRISP will work to supplement this initial pilot effort with the additional items identified by hospitals and SNFs through the SNF Connectivity Study process and utilize lessons learned moving forward.

## **Population Health Activities**

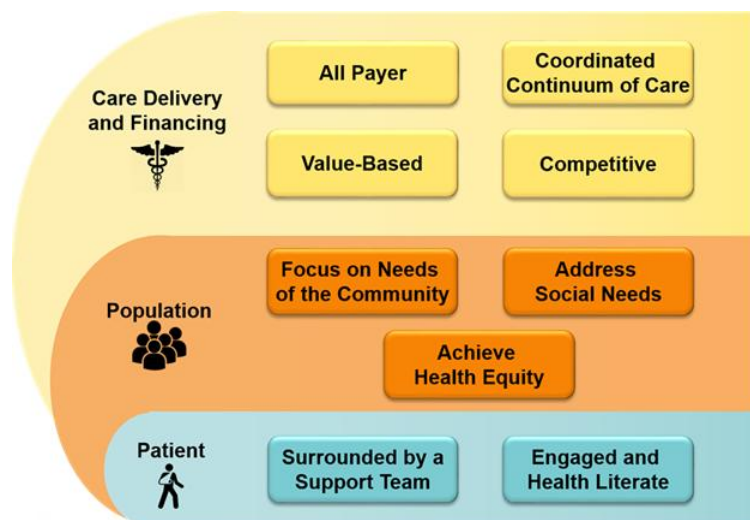
Three main avenues of health innovation were pursued in the area of population health by the Maryland SIM team. These areas included: 1) creating an overarching plan for population health improvement in the State; 2) evaluating and updating the current measurement system to gauge the health status of the population and formulate interventions; and 3) exploring the capacity of health IT to increase care planning and coordination as part of improving population health outcomes in the State. All three of these activities are discussed in the following sections.

## **Population Health Improvement Plan**

The unprecedented change to hospital payment in the All-Payer Model is creating a strong incentive for hospitals to pursue population health strategies that prevent potentially avoidable utilization and keep their communities healthy. To this end, a framework for prioritization in population health improvement efforts in Maryland is needed to align efforts across the health system. The Population Health Improvement Plan lays the groundwork for long-term improvement in population health by identifying a process as a means to improve health outcomes and health equity. The goal of the Plan is to provide concepts and a framework for identifying priorities to address the most pressing health needs of Marylanders to reinforce future health transformation in the State.

Maryland's foundational design work on the Plan provides a conceptual framework for thinking through future population health improvement activities and priorities. The Plan's intent is to support Maryland's population health vision of a system that functions as a fully integrated system of health for the individual, regardless of that individual's location or complexity (see figure 3-10).

**Figure 3-11. Approach to an Integrated Delivery System<sup>21</sup>**



Through a strategic thought framework process, the Plan provides a guide for identifying population health priorities and emphasizes the need for future consideration of the feasibility and sustainability of strategies that could be used to address population health priorities. The Plan aimed to improve population-level health outcomes by providing a structure that prioritizes health equity; catalyzes collaboration among government agencies (state, local and federal), community-based organizations and private entities; and emphasizes activity alignment and support of the goals of the Maryland All-Payer Model.

### Establishing Criteria, Goals and Process

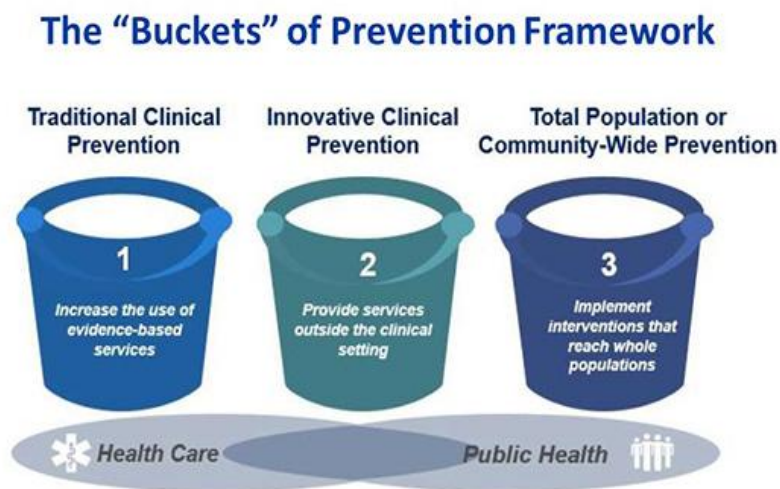
Population health management and population health improvement initiatives work in parallel with payment and health care delivery system reform and function to support the same goals. While the changes to the health care delivery system are designed to improve care coordination and to deliver quality care more efficiently, population health improvement initiatives are designed to reduce the need for care and reduce reliance on health care services and emphasize prevention by addressing the social determinants that give rise to care that could have been avoided.

To move towards active prevention utilizing population health, the Centers for Disease Control and Prevention (CDC) articulated a conceptual framework for population health and prevention. This framework identifies three “buckets of prevention” for use in categorizing prevention interventions.<sup>22</sup> Each bucket reflects a different scope of activity, expands the reach to a broader population base, and opens a broader set of intervention options (see Figure 3-12).

<sup>21</sup> Maryland Department of Health and Mental Hygiene Office of Population Health. (2016).

<sup>22</sup> Auerbach, J. (2016). The 3 buckets of prevention. *Journal of Public Health Management & Practice*, 22, 215-218.

Figure 3-12. The 3 Buckets of Prevention<sup>23</sup>



The Plan utilizes these three buckets as the foundation for considering options to address priority areas of public health improvement.

The Plan’s overall goals intentionally suggest, through a series of thought frameworks, that planning for population health improvement requires focusing beyond the healthcare clinical space and into the innovative non-medical healthcare space to comprehensively address all factors that determine health. Further, the Plan looks to elevate an existing conversation and recognition that to improve population level health outcomes requires the prioritization of efforts that address, invest in and sustain health equity.

### Stakeholder Engagement

DHMH engaged stakeholders with regard to the Population Health Improvement Plan over several distinct stages, including a Population Health Summit and stakeholder presentations.

DHMH’s stakeholder engagement process occurred through three distinct stages: a population health summit, stakeholder presentations and an external public comment period. The purpose of this process was to guide the development of this framework and planning document and to refine it through ongoing discussions with stakeholders across state agencies, county health departments and other community representatives. The goal was to provide an accurate representation of the current environment in Maryland, to elucidate and identify innovations that are occurring elsewhere and to work toward developing priorities for future policy around population health improvement.

---

<sup>23</sup> Auerbach 2016.

### *Population Health Summit*

In April 2016, a Population Health Summit (the Summit) was convened. The Summit was an all-day program involving more than 110 health professionals from across the State. The purpose of the Summit was to determine the critical input criteria for priority-setting within the Population Health Improvement Plan. To achieve this goal, the Summit included presentations about Maryland's health status and Maryland's comparative performance on a national level. Additionally, successful and innovative programs were explored through presentations from health improvement programs from across the country. Attendees participated in workgroups charged with recommending population health improvement priorities and refining a process for identifying priorities for Maryland. To supplement this input, a post-Summit survey further refined stakeholder priorities in regard to health improvement initiatives, as well as the populations these initiatives should target.

### *Stakeholder Presentations*

From July through November 2016, targeted stakeholder input on the Population Health Improvement Plan was garnered via a Road Show series of presentations to a wide group of stakeholders. Over the course of the Road Show, stakeholders were presented with the high-level goals of the Plan within the context of the All-Payer Model. Stakeholders included internal DHMH partners (in the areas of minority health, chronic disease and behavioral health, among many others) as well as other stakeholders including but not limited to: Local Health Officers, the Duals IDN Workgroup, and HSCRC-led workgroups. Stakeholders were asked to provide feedback on the Road Show presentation and sections of the Population Health Improvement Plan. Feedback was subsequently incorporated into the Plan.

### *Overarching Strategies and Priorities to Improve Population Health*

The Population Health Improvement Plan is directed by the following overarching strategies:

- **Conceptual Frameworks** – Building upon the conceptual frameworks of State Health Improvement Process, County Health Rankings and Auerbach's '3 Buckets of Prevention.'
- **Determinants of Health** – Address the social, environmental and economic determinants of health and engage those agencies funded to address these issues; strategy implementation will often require a care management entity to integrate efforts across agencies.
- **Health Equity** – Improve health equity by focusing prioritization and investment on approaches that address the root causes of health inequity—social determinates of health, disproportionate investment and resource allocation, among others.
- **Community Engagement** – Engage the community to support, design and sustain population health improvement initiatives.
- **Non-traditional health care initiatives** – Employ evidence-based strategies to build upon existing home- and school-based services, among other non-traditional settings.
- **Locally-Defined** – Recognize that each locality (jurisdiction, region, entity, state) must establish their highest priorities, define achievable targets and determine what strategies are feasible, likely to be or are most effective in their communities and are sustainable.
- **Measuring Progress** – Define outcomes targets that go beyond State Health Improvement Process (SHIP) measures and require ongoing evaluation and prioritization; measurement is critical to monitor progress and to establish alignment.

The Population Health Improvement Plan identified six evaluation criteria that should be considered when thinking through actions to improve population health. These six criteria include:

1. Local Priority – Reflects identification of priority by hospital, Local Health Improvement Coalitions (LHICs), Local Health Department and the State through community health needs assessments and identified priorities, as well as the priorities defined by stakeholder responses to the post-Summit survey.
2. Evidence Base – Reflects the literature reviewed and promising practices to support the value of intervention (*i.e.*, impact evaluations from across the country and experience in Maryland).
3. Financial Return on Investment (ROI) – Reflects the magnitude of the financial return on investment, achieved through utilization reduction and tied to interventions and strategies.
4. National Performance – Reflects the performance gap between Maryland and national data such as the County Health Rankings, United Foundation for America’s Health and Centers for Disease Control and Prevention (CDC) sources. Consideration of how to score the intervention based on whether Maryland met, exceeded or has not met the benchmark should be weighed respectively.
5. Alignment with goals for collaboration and prevention – Reflects the degree of collaboration to assure the best use of resources.
6. Magnitude of population and magnitude of burden that would be addressed – Reflects the number of people affected and the costs of care.

While the Plan proposes six evaluation criteria, it does not exclude additional criteria that local entities may identify, nor does it require that all entities weigh criteria areas in the same manner. The priorities are intended to be consistent with core initiatives established by State agencies, as well as Local Health Departments. The criteria are aimed at mobilizing stakeholders to improve health around shared goals for the State as a whole, while allowing localized entities and partnerships to determine how to most effectively produce change using the prioritization criteria as a guide. The Plan is written with the assumption that each locality and community will work to leverage the resources of the public health, social services, the health care delivery system, and community-based groups to support population health improvement efforts.

As Maryland advances into the next generation of health promotion, Maryland will implement multi-level initiatives aimed at providers, communities and the population as a whole. Diverse financing sources will be essential to support initiatives with near-, mid- and long-term projections for return on investment—this is referred to as a balanced portfolio. Future work with the Plan will comprehensively assess the existing investments in population health improvement strategies, explore how to leverage these investments, identify new financing mechanisms and govern braided investments in keeping with the goals of the All-Payer Model.

### **Population Health Measures for Health Transformation**

As part of the SIM project and broader transformation efforts, Maryland has been preparing for further alignment of its population health initiatives with the progression of the All-Payer Model. The State believes it is vital to align all of its stakeholders, monitor the health of the population, identify areas in need of intervention and create interventions that align stakeholders across the board. The State currently monitors 39 measures of population health through the SHIP (see Chapter 1 for a more detailed description of SHIP). These measures are drawn from annual surveys and claims data. While these measures provide vital information about the state of population health in Maryland, the current

measures lack the capacity to illuminate real-time changes in population health, as the current data collection methods require extensive preparation time.

To extend the utility of SHIP and include additional measures designed to provide an understanding of population health in Maryland that reflects real time trends, the SIM project undertook the Population Health Measures Project (the Measures Project). The Measures Project focused on identifying a small set of measures that address broad indicators of health, including: chronic disease, risk factors associated with chronic illness and hospital utilization that can be calculated in real-time using CRISP's data analytic capabilities.

Together the new measures aim to provide a broad picture of population health in the state and an impetus for innovative interventions in care; to encourage policy innovation; and to serve as a vital resource of real-time population-level measures of health. The Measures Project included two phases of development. Phase 1 included the creation of a Population Health Framework for Maryland and the identification and development of candidate measures. The second phase of the Measures Project focused on two areas to beginning the process of planning for population health measure accountability. The project assessed electronic data sources and infrastructure needed to calculate these measures at a population level, as well as how the proposed priority measures would progress and be deployed over time.

#### Alignment with the All-Payer Progression Plan

The Population Health Measures Project works in support of the key tenets of the Progression Plan (see Chapter 2 for additional detail.)

**Theme Two: Align measures and incentives** for all providers with the goals of the All-Payer Model. This will be accomplished via the following strategies:

- I. Reorient hospital measures to align with new model goals;
- II. Align measures across providers and programs; and
- III. Engage physicians and other professionals by leveraging the incentives and requirements created by MACRA.

### Stakeholder Engagement

As part of the Measures Project, Maryland partnered with CRISP and other subject area experts (see Table 3-13) to develop a comprehensive framework of population health measures that can be derived over the near-term with available electronic data to assess the health status of target populations and communities.

**Table 3-13. Partners in the Population Health Measures Project**

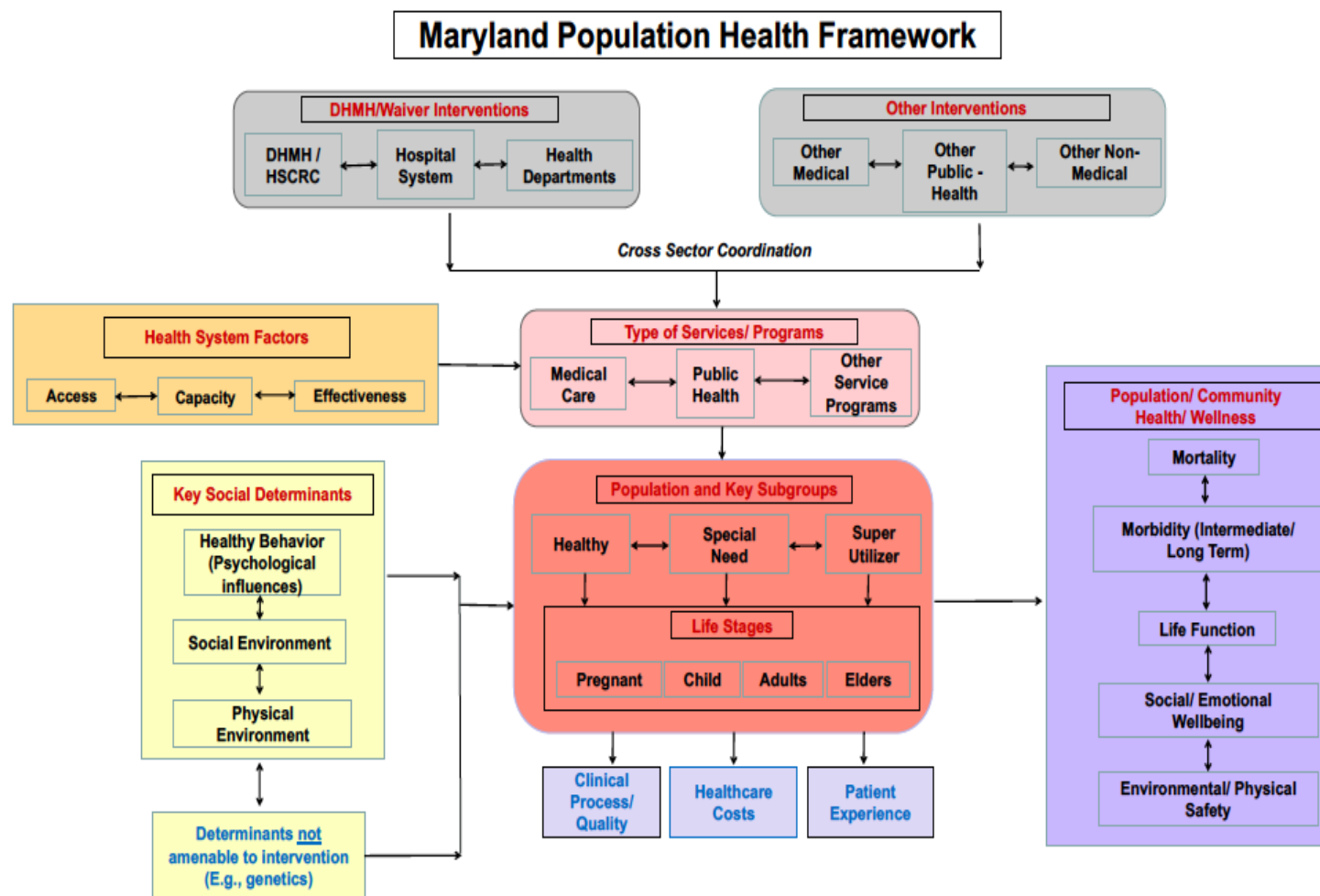
Partner	Association
CMMI	Federal agency
CDC	Federal agency
HSCRC	State agency
Medicaid	State Agency
Local Health Departments	State Agency
CRISP	State-Designated Health Information Exchange

Partner	Association
JHU Center for Population Health IT (CPHIT)	Contractor/Academia
Consumer advocates	External stakeholder
Hospitals	External stakeholder
Payers	External stakeholder
ACOs	External stakeholder
Providers	External stakeholder

These stakeholders shared on-the-ground perspectives how to improve the measure definitions, data sourcing and progression. Further collaboration with these stakeholders is anticipated after the culmination of the SIM project.

A Population Health Framework for Maryland was developed as an interim step to identify appropriate and meaningful population-level measures. To develop both the framework and identify appropriate candidate measures, the following work was undertaken: identification and of existing population health frameworks and measures; evaluation of other frameworks and measures for congruence with the State's structure and needs; an extensive review of the peer-reviewed and grey literature regarding population health frameworks and measures; and an environmental scan of the measures used on a national level by leading population and public health institutions (see figure 3-14 for the resulting Population Health Framework).

Figure 3-14. The Maryland Population Health Framework





The framework served to outline the populations of interest, as well as the types of health metrics needed. These metrics include: 1) health system factors including, access, capacity and effectiveness; 2) population and community health and wellness (mortality, morbidity, life function, social and emotional well-being) and environmental and physical safety; as well as 3) key social determinants, including healthy behavior, social environment and physical environment.

In developing criteria for the measures, the State focused on using existing measures with the caveat that specifications would be altered to fit the unique needs of Maryland. The State developed a list of 15 community and population health measures, which cover a broad set of populations and priorities. Several of the measures exist in the current SHIP framework; however, the majority of the measures are new. Table 3-15 below presents the list of measures.

**Table 3-15. Set of 15 Population Health Measures**

Measures
<b>1. Body Mass Index (BMI) screening and follow-up for community/ population</b>
<b>2. Screening for high blood pressure and follow-up for community/population</b>
<b>3. Current adult smoking within population</b>
<b>4. Falls; Fall-related injury rate</b>
5. Diabetes-related emergency department visits for community/population
6. Asthma-related emergency department visits for community
7. Food – nutrition; fruit and vegetable consumption for population
8. Counseling on Physical Activity in the Population
9. Median household income within population
10. Levels of housing affordability and availability
11. Age-adjusted mortality rate from heart disease for population
12. Addiction-related emergency department visits
13. Social connections and isolation
14. Functional Outcome Assessment
15. Self-Reported Health Status

### **Prioritization of Measures in Alignment with the All-Payer-Model**

The SIM team and its stakeholders collaborated to identify a subset of measures of focus. Six measures were initially put forward and evaluated on their feasibility for electronic reporting in the near- to mid-term; this subset was further narrowed to four measures, to account for the data assessment rigor required to advance their application. The four measures (in bold font in Table 3-15) represent broad and pressing areas of health directly related to the All-Payer Model Progression Plan’s focus on Medicare beneficiaries—including dual eligibles—advanced primary care, improvement in the TCOC and quality.

The selected priority measures represent the domains of system effectiveness-process quality-morbidity (BMI and high blood pressure); healthy behavior-determinants (adult smoking); and morbidity-mortality-physical environment-safety (falls) (see Table 3-15). Consistent with the populations of focus for the Progression Plan, the measures focus largely on adults and frail elders. Measures will be calculated based on a number of different data sources that may include but will not be limited to clinical data from EHRs, the HSCRC, claims data, and surveys.

### **Alignment with the All Payer Model**

Maryland seeks to drive a system of health that is focused on reducing the burden of chronic illness, addressing the risk factors and other non-medical determinants of health, improving health equity and reducing disparities in outcomes. As such, the Population Health Measures project is fully-aligned with the State's Progression Plan and will directly support the State's All-Payer Model Amendment. As described in Chapter 2, the Amendment was negotiated over calendar year 2016 and recently-executed with CMS to align hospital and non-hospital provider incentives to encourage care redesign.

Population health is also featured in the Care Redesign Amendment. Appendix 7 of the Amendment calls for the State to submit a Population Health Plan to CMS by June 30, 2017. The Population Health Plan will describe a transformation to value-based payments for selected population health measures. This plan will include:

- Identifying measures that will be incorporated into the State's Appendix 7 measure reporting to CMS, as described in the All-Payer Model Agreement;
- Identifying at least three priority improvement measures for improving the State's population health;
- Proposing potential interventions to improve population health in these priority areas, including those that promote collaboration among State entities, public health agencies and providers;
- Proposing outcomes-based measures that assess progress on population health improvement; and
- Describing pathways to transition to population-based hospital payments.

The SIM Population Health Measures Project will be used to inform the selection of the measures included in the Amendment's Population Health Plan.

In the future, DHMH and HSCRC will work closely together to develop value-based payment methodologies, which could include population-based payment for hospitals based on outcomes associated in their communities. This kind of transition will depend on the capacity of hospitals to accelerate partnerships with the community providers, community-based organizations, Local Health Departments, consumers, social service organizations and other non-medical entities to improve the overall health of Maryland residents. Accordingly, the State is developing a framework of priorities and evidence-based interventions to support the health care system make smart investments throughout the system.

### **Data Infrastructure and Measure Progression**

The final phase for this stage of the Population Health Measures project involves two components. The first is to assess the data sources and infrastructure needed to calculate these measures in a comprehensive and population level. During the second phase the State and its partners mapped out

the progression of the proposed measures, moving from process, to structure, to outcome measures, based on the feasibility of capturing the data.

The State has worked to understand the current and future data environment for the proposed population health measures, in the areas of:

- Data assessment: Assessing the feasibility of current EHR-type data being collected at the HIE level; and
- Data Infrastructure: Developing a strategic plan to capture the broader 15 measures of population health.

The State anticipates receiving and aggregating incoming data at various levels including individual, zip code, County, State and national. Data sources will include: clinical, administrative, survey and vital records. In an effort to make data more timely and actionable for population health, the State is reviewing the data sources closely to ensure measure capture is feasible and optimal.

Another crucial step is to map the transition of measures from process to outcome, as data and other sources continue to grow in robustness. Measure Deployment Progression Plans have been initiated for the four prioritized population health measures to detail this transition for capturing and measuring population health. The ability to transition from process- to outcome-based reporting will likely parallel the timeline for Maryland's health system to implement meaningful population health interventions for attributed populations.

## Care Planning

In recent years, Maryland has embarked on a significant and innovative effort to improve care and reduce growth in health care spending. Improving care coordination is an important component of Maryland's strategy to meet the goals of the All-Payer Model.<sup>24</sup> To support this work, CRISP has embarked on an expansion of its existing services to cover the cooperative IT and data needs of stakeholders in Maryland, including hospital systems, physicians, health plans, and public health officials.

Over the past year, CRISP and DHMH have worked closely with stakeholders to identify the statewide care coordination needs that would benefit most from cooperative IT solutions. Stakeholders identified the increasing importance of sharing care plans across providers as care management and care coordination activities accelerate across the state. To meet this need, DHMH and CRISP have developed an approach to enable the aggregation and exchange of care plans across providers who are treating the same patients, especially during emergency room visits and hospitalizations. Improving the exchange of care plans will help to support the goal of the SIM project's work to develop a strategy to integrate care delivery for high-need patients in Maryland, including those with multiple chronic illnesses, high-utilizer populations, and individuals who are dually-eligible for both Medicaid and Medicare.

---

<sup>24</sup> Care coordination involves deliberately organizing patient care activities and sharing information among all of the participants concerned with a patient's care to achieve safer and more effective care. Source <http://www.ahrq.gov/professionals/prevention-chronic-care/improve/coordination/index.html>

### **Current Care Plan Development Overview and Findings**

Care planning and care plan development have been of growing importance in the broader care managements discussions in Maryland. Hospitals, community-based organizations and health plans have all been actively working to increase care planning efforts across the state. All of these organizations are developing care plans, which vary considerably in terms of purpose, content, and application. An environmental scan of the various care plans being developed across the sectors in Maryland revealed that there is no one single definition across organizations or programs of what a care plan is or what content a care plan should contain.

Care plans are being used for varying purposes including supporting care coordination and avoiding inappropriate utilization of services. However, developing overarching care plans outside of isolated episodes of care is not currently embedded into clinical responsibilities and constitutes a time-consuming process that is not always a priority. Additionally, when a care plan does get developed, there is significant variability in the process, structure and content across organizations. In fact, the system is so disjointed that patients may have multiple active care plans from different providers and institutions at any given time. Therefore, one of the biggest challenges to sharing care plans via an electronic vehicle such as CRISP is that care plans themselves vary significantly between organizations.

Another major challenge is that the technical standards for electronic care plans are at a nascent stage of adoption and deployment by health IT developers. The most prominent technical standard for care plans used by health IT developers and supported by the ONC is in the early stage of being rolled out, and it is unclear how many health IT developers will adopt this optional standard.

### **Current CRISP Approach to Care Plan Exchange**

Over the past year, the SIM project, in conjunction with CRISP, has worked closely with stakeholders to develop a scalable solution for creating and disseminating care plans. The approach outlines a systematic, efficient process to assist in the development of integrated care plans that can be developed by and shared with an individual's providers across the state, regardless of setting.

### **Care Plan Exchange Solution**

CRISP has been working with hospitals for the past year to better understand how care plans are developed and how CRISP can support their exchange across organizations. CRISP is currently receiving care plans from three hospitals, and several others have begun the process of being able to share care plans.<sup>25</sup> Additional hospitals are in discussion with CRISP to share care plans.

### **Sharing Care Plans**

For CRISP to enable care plan exchange, a few foundational elements have to be in place. First, organizations need to have care plans available to share. Organizations that do not already have processes in place to create care plans will need to develop them. These steps include:

- 1) Establishing qualifying criteria for which patients will receive care plans;

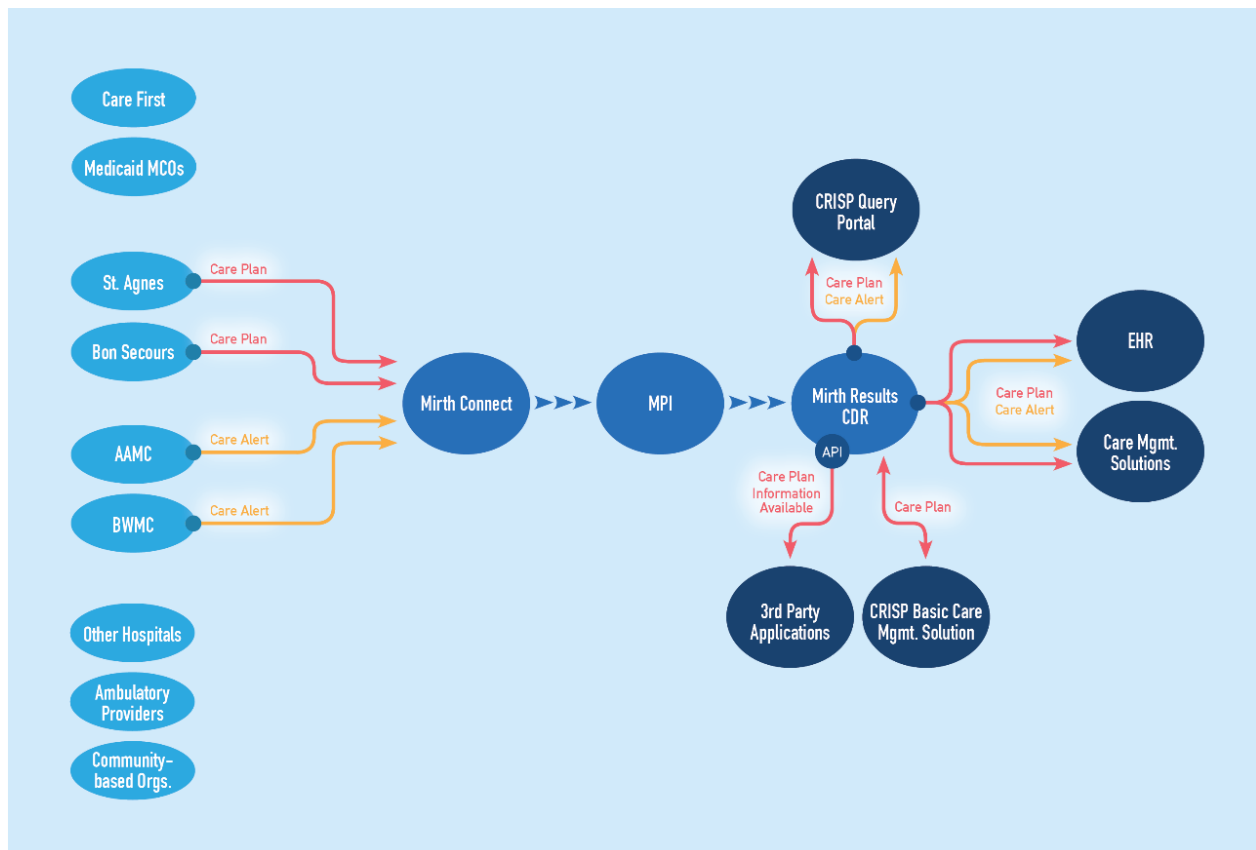
---

<sup>25</sup> St. Agnes Hospital, Bon Secours Baltimore Health System, and Upper Chesapeake Medical Center. The Upper Chesapeake Medical Center is providing care plans through the CRISP basic care management solution, discussed in more detail below. In Spring of 2016, Greater Baltimore Medical Center and Carroll Hospitals Palliative Care initiated the process to begin sharing care plans via CRISP.

- 2) Allocating sufficient resources to implement and maintain ongoing support for the process of creating and maintaining care plans; and
- 3) Establishing a governance process to provide input into the development and structure of care plans.

Second, for inter-organizational electronic exchange, organizations must use the technical infrastructure CRISP has implemented to support the exchange of care plans. CRISP is focused on serving as a central hub for care plans for organizations that are able and willing to share them. Figure 3-16 below outlines the infrastructure CRISP is using to receive and share care plans.

**Figure 3-16: Care Plan Exchange Approach**



In reviewing the care plan exchange approach displayed in Figure 3-16, care plans are sent to CRISP through new or existing data feeds from participating organizations. CRISP can receive care plans in a variety of formats, such as PDF and structured HL7 (Health Level Seven<sup>26</sup>) message. When CRISP receives a care plan, it is converted into a PDF and made available to other providers in a new section of the Clinical Query Portal patient summary screen called “Care Management.” The clinical portal is the initial

<sup>26</sup> <http://www.hl7.org/>

access point for most providers. For an individual patient, one care plan from each source is available in the Clinical Query Portal; when the plan is updated the previous version is replaced. Care alerts also play an integral role in this process and allow providers to send essential messages to other providers—such as a treating emergency room physician—regarding how the patient’s established care plan may impact their clinical work flow.

In addition to the Clinical Query Portal, CRISP is working to make care plans available through multiple other avenues to meet the needs of providers. CRISP is actively working with health IT developers to integrate care plans and care alerts into providers’ native EHR workflows. CRISP has created an application program interface that will notify third party systems when a care plan is available for a patient. This will enable providers to receive in-context alerts in their EHR when a care plan is available in the Clinical Query Portal.

CRISP is also offering a basic care management solution to organizations that do not currently have a solution that supports the development and exchange of care plans. Care plans created in the solution also populate the Clinical Query Portal, increasing the ease of use for providers and reducing administrative burden. CRISP is working to integrate the care management solutions that organizations might already have in place—which could include care plans—with the HIE.

### **Next Steps**

CRISP has implemented foundational infrastructure to centrally aggregate care plans and make them available through multiple avenues to providers. In the near term, CRISP is working to expand the number and types of organizations submitting and using care plans moving forward. Health plans, including managed care organizations, ACOs and health maintenance organizations are a significant potential source of care plans for CRISP that to date have not been made available for exchange. CRISP will continue to work to improve the initial infrastructure to make it easier for providers to integrate care plans and care alerts within their EHRs. In the long term, CRISP is working to develop and implement a policy framework to allow non-covered entities to submit care plans to CRISP. This will enable community-based organizations (important players in the success of the All-Payer-Model) to share care plans through CRISP as well.

## **Milestones: SIM Activities to Support Health System Transformation**

Maryland is excited to build upon the products of its SIM project, moving the design activities described in this chapter toward implementation. The development work around the Duals Accountable Care Organization model will continue into 2017 and 2018, with further stakeholder engagement and dialogue with CMS as the model is refined into the necessary formats for federal approval. Implementation is expected for 2019. The SNF Connectivity Study will be put into action; Maryland is applying for federal support with the aim of ramping up connectivity activities in 2017. Lastly, the concepts and frameworks developed under the Population Health Improvement Plan and the Population Health Measures Project are contributing to the development of the State’s Population Health Plan, which will be submitted to CMS in June 2017, per the requirements of the All-Payer Model’s Care Redesign Amendment.

# Chapter 4: Supporting Transformation— Health Information Technology

---

Maryland is a leader in adopting health information technology, placing considerable emphasis on advancing health information technology (IT) and engaging stakeholders in planning and implementation activities. Maryland has a number of advantages for implementing health IT initiatives, such as the presence of early innovators, strong State leadership in the State-designated health information exchange (HIE), the Chesapeake Regional Information System for our Patients (CRISP) and a successful Electronic Health Record (EHR) Incentive Program. Hospitals and other health care providers are actively engaged in efforts to expand health IT throughout Maryland. Maryland's collaborative nature, diverse population and relatively small size have made it convenient for stakeholders to meet regularly to explore options for expanding health IT, and to develop policies to protect the exchange of electronic health information.

Health IT serves as the linkage that will bridge existing and future health care initiatives in Maryland, improving efficiency and clinical outcomes and decreasing the reporting burden on providers. Building on current resources to create a robust data infrastructure and analytic capacity is essential to the success of the SIM project and overall health system transformation. The primary function of the expanded data infrastructure and tools will be to assure optimized coordination of care for patients as they receive care from multiple providers, including hospitals, primary care providers, and health care partners like schools, social service providers and public health departments that have not traditionally been considered part of the Maryland's health system transformation. In addition to care coordination, secondary functions will include performance monitoring, planning and targeting of resources, enrollment, predictive modeling, and evaluation.

Success in building new data functions will depend on cross-cutting efforts to enhance these existing data resources, integrate data from various sources and build advanced analytic capacity. This section includes a description of existing data system and proposed new data systems. The text box below presents a summary of the data functions as part of the SIM model and which systems will be used to carry out the functions.

## Existing Data Infrastructure

Maryland has a robust data foundation to build on with many of the basic building blocks of the data infrastructure that will be needed to support transformation already in place or in the process of being developed including: the Hilltop Institute; DHMH's Virtual Data Unit; an All-Payer Claims Database (APCD), the Medical Care Data Base (MCDB); CRISP; EHR adoption; hospital encounter and payment data; the Health Benefits Exchange; and a State Health Improvement Process (SHIP).

## The Hilltop Institute

Through a Memorandum of Understanding (MOU) established in 1994 between DHMH and the Hilltop Institute, Hilltop has served as a data warehouse and provides technical support to DHMH on projects designed to improve the Maryland Medicaid Program. The responsibilities of Hilltop are to: 1) assist the Department of Health and Mental Hygiene (DHMH) in managing the HealthChoice Medicaid managed care program, including rate-setting, and data and policy analysis; 2) provide data analyses, rate-setting support and policy development of innovative proposals; 3) provide administrative support activities; 4) facilitate database development; and 5) produce and disseminate studies, reports and analyses.

## Virtual Data Unit

DHMH's Virtual Data Unit (VDU) publishes a wide range of public health data such as surveillance data and vital statistics from which population health performance can be extracted. Based within the Vital Statistics Administration, the VDU acts as a central hub for DHMH's health data and establishes standards for data collection and reporting. The VDU also provides a mapping facility for hospital discharge data by zip code and 10 diagnostic groups and also maintains the State's health statistics website. Although supported through another funding stream, the VDU aligns with—and will contribute substantially to—accomplishing the priorities set forth for transforming health in the State. For example, the powerful analytic capabilities of the VDU can be leveraged to assure ongoing stakeholder input; provide population level surveillance to determine the effects of specific policies related to health system transformation; to identify key populations in need of additional intervention; or to identify trends in the population health metrics used to evaluate the initiatives that will be put into place as part of health system transformation in Maryland.

## Medical Care Data Base

Another important data resource in Maryland is led by the Center for Analysis and Information Services (CAIS), a center within the Maryland Health Care Commission (MHCC). CAIS has ongoing responsibility for managing an APCD, commonly referred to as the Medical Care Claims Database. The MCDB collects and aggregates eligibility; professional services, institutional services, pharmacy and dental claims; and provider data for Maryland residents enrolled in private insurance plans, Medicaid managed care

### Maryland's Data Infrastructure

- CRISP – Maryland's Statewide health information exchange: Live ADT feeds from all Maryland hospitals; most lab data; imaging data; "master patient index" capability
- Hospital Encounter and Payment Data – Utilization, demographics, diagnostic information, hospital charges (=cost in Maryland)
- EHR Adoption: 50% of primary care providers have adopted EHRs, including 100% of FQHCs
- Medical Care Data Base – Currently contains all commercial claims (and Medicare data)
- Virtual Data Unit – Maryland's version of the Health Data Initiative – public health surveillance data, vital statistics, etc.



organizations (MCOs) and Medicare. It also includes out-of-state members enrolled in private insurance plans that are sold in Maryland.

MCDB data is used in a variety of use cases, which include, but are not limited to:

1. Cost and utilization trends analyses and geographic variation of cost and utilization measures;
2. Episodes of care studies;
3. Data releases to the Maryland Insurance Administration for rate review;
4. Legislative reports and State-mandated studies;
5. Supporting the measurement of Total Cost of Care (TCOC) as required under the All-Payer Model;
6. TCOC benchmark studies;
7. TCOC physician practice reports;
8. Data releases to researchers for health studies; and
9. Population studies.

Additional sources of data are highlighted in Figure 4-1 below.

## CRISP

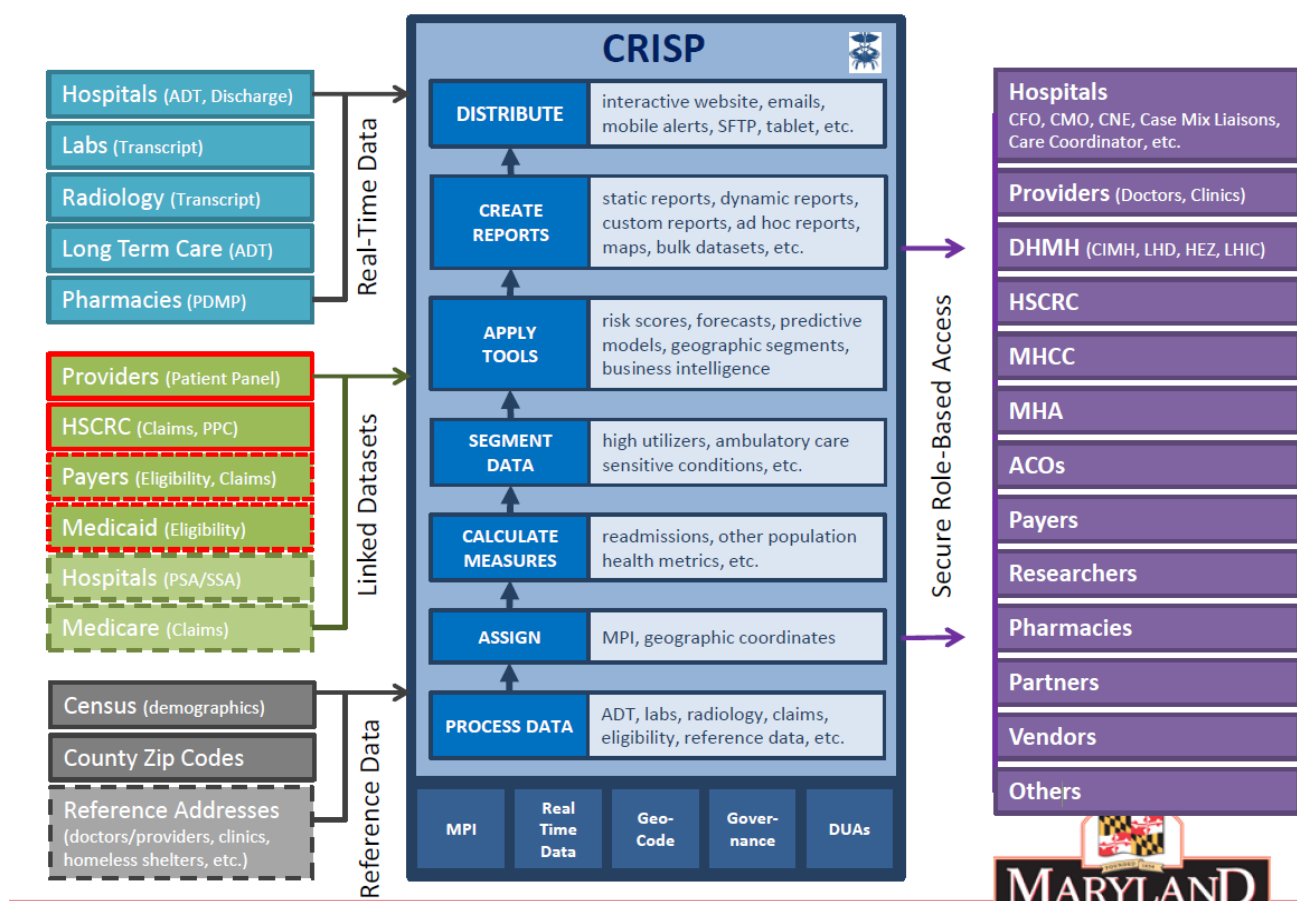
As the State-designated HIE, CRISP serves as the foundation underlying many of Maryland's health IT initiatives. CRISP currently has established connectivity with 69 hospitals, including all 47 of Maryland's acute-care hospitals, uniquely situating Maryland to improve health outcomes and increase clinical efficiency. In addition to hospital data, the HIE also contains laboratory data from 30 of the 47 hospital-based laboratories and Maryland's two main private laboratories. CRISP contains radiology imaging data and has master patient index capability. CRISP currently maintains unique identifiers within their master patient index for more than 10.5 million patients. The master patient index links individual patients across multiple providers and health systems, greatly facilitating the coordination of care. Maryland providers can utilize the online portal to obtain discharge summaries, consultation and operative notes, laboratory results, transfer summaries, histories and other information. In addition to the substantive and growing number and types of health care providers sharing data, the HIE is governed by an opt-out approach to patient participation. Since the inception of the HIE through October 2016, approximately 7,000 patients had opted out of the provider search capability, meaning that the vast majority of Marylanders can benefit from the care coordination supported by Maryland's health IT initiatives.

Additionally, CRISP was selected as Maryland's Regional Extension Center for Health IT (REC) by the Office of the National Coordinator for Health Information Technology (ONC) with an objective of assisting 1,000 primary care providers to deploy EHRs and achieve meaningful use by 2014. CRISP utilizes a network of Management Services Organizations as an implementation arm of its REC function, which supports providers in areas such as implementing EHRs, achieving Meaningful Use, reporting for quality initiatives, redesigning workflows, engaging in practice transformation, and facilitating patient engagement with health IT. Like other states, Maryland began encouraging EHR adoption among providers from a low starting base. The original goal of 1,000 providers was met in 2014, with 1,100 REC-assisted providers having achieved Meaningful Use as of mid-2016. With each ambulatory provider achieving Meaningful Use, the robustness of Maryland's clinical data resources and ability to measure quality and TCOC increases even further. As the State pursues additional transformation programs in the

ambulatory setting under its Progression Plan—such as the Duals Accountable Care Organization and Maryland Comprehensive Primary Care Models—widespread connectivity becomes paramount.

Figure 4-1 provides an overview of CRISP’s connectivity and analytic capacity.

**Figure 4-1: Overview of CRISP’s Connectivity**



CRISP data capabilities were enhanced to include hospital diagnostic and payment data from the HSCRC. This enhancement improved Maryland’s capacity to track avoidable emergency department and hospital admissions as well as calculate and monitor costs associated with acute care utilization. CRISP data are also being leveraged to improve the tracking of intra-hospital readmissions as well as readmissions between hospitals, which is critical for monitoring success under the All-Payer Model. As with increased connectivity through the EHR Incentive Program and Meaningful Use, these additional data sources and capabilities will also be leveraged to support the implementation of upcoming programs under the Progression Plan. CRISP also has the ability to generate geo-coded patient-level utilization maps for purposes of modeling different ways that patients might be attributed to hospitals based on their

plurality of their care. This technology has been critical in supporting innovation under the All-Payer Model; specifically, the HSCRC has applied it to an Area Deprivation Index analysis to look at readmission risk and other impacts of socio-economic status on the cost of health care.

## **Core Health Information Technology Tools**

Providers in Maryland connected to the HIE have an array of tools at their hands, depending on their level of connectivity, to facilitate the coordination of care, encourage proactive care in appropriate settings and reduce the burden of reporting—key steps toward achieving transformation. The following section outlines some of the major functionalities available to connected providers in Maryland.

### **Encounter Notification Service**

CRISP's Encounter Notification Service (ENS), a nationwide leader in this area, allows participating providers to receive real-time alerts regarding their patient's care using Admission-Discharge-Transfer (ADT) messages. Coupled with the HIE portal, participating physicians and their care coordination teams are able to access relevant clinical documents to proactively coordinate care for patient panels to which they subscribe. Providers can also review their patients' hospital stays securely using DIRECT email messaging (see below). This service is available to all primary care physicians and other providers with a direct care relationship with patients. Currently, there are 1,400 ENS users with over 10.5 million patients covered within the ENS, resulting in over 1.3 million notifications each month. CRISP has recently enhanced the ENS program—including real-time streaming of alerts, custom filter and management options and a multiple patient panel view—making it even easier to integrate the use of ADT messages into practice workflow.

### **Clinical Query Portal**

Available to clinical staff, the CRISP Clinical Query Portal allows providers to securely look up clinical patient information at the point of care. The Clinical Query Portal facilitates access to patient data across institutional boundaries and provides physician practices access to real-time clinical information from all CRISP participants, including lab results, radiology reports, discharge summaries, history and physicals, consultations, operative notes and transfer summaries, as well as access to certain medication fill history information. The portal also recently expanded to include encounter notifications and medications from the Prescription Drug Monitoring Program (PDMP; see below) in Maryland and neighboring states. All of the 47 acute-care hospitals in Maryland share data via this portal. CRISP also receives data from all major lab and radiology centers. In addition, through a partnership with the MHCC and MyDirectives, providers can also access advanced directives submitted online through the Query Portal.

Utilization of the Clinical Query Portal is high, with more than 9,000 providers recording over 125,000 queries per month. Maryland anticipates this utilization to continue growing, with a vision to open the portal to non-clinicians such as the care coordinators and care managers integral to successful practice transformation.

### **CRISP Reporting Services**

CRISP Reporting Services (CRS) links case-mix data from the HSCRC with unique patient identifiers to develop a standard set of monthly reports to Maryland hospitals. The reports display analyses of trends and utilization across hospitals, which can be applied by health care organizations to support quality improvement, strategic planning and financial modeling. In addition to aggregate reports, CRS makes

available customizable (user-filtered) dashboards, including Patient Total Hospitalization, Total Cost of Care and High Utilizers. The tandem progress toward TCOC accountability across all health services is evident in two new resources that CRISP developed in late 2016, containing data from Medicare's Limited Data Set and Chronic Condition Warehouse. Collectively, reports available using these data provide insights on demographics, acute and post-acute service utilization, aggregate service cost by service type and zip code, as well as per beneficiary, per month cost trends. Another functionality now available with the new data is the monitoring of Medicare total cost of care within primary service areas as defined by Global Budget Revenue structure.

### **DIRECT Messaging**

DIRECT Messaging is a secure and encrypted email service that supports electronic communication—including the sharing of ENS alerts—between physicians, nurse practitioners, physician assistants and other health care providers. This service is offered statewide and is aimed at increasing care coordination and continuity of care while supporting Meaningful Use. All Maryland-based health care providers are eligible for a CRISP DIRECT Messaging account.

### **The Maryland Prescription Drug Monitoring Program**

The HIE serves as the access point for clinical providers, including prescribers, pharmacists and other licensed health care practitioners to the data generated by the Maryland Prescription Drug Monitoring Program. This program assists health care providers and public health and safety authorities in reducing the non-medical use, abuse and diversion of prescription drugs while preserving legitimate professional practice and patient access to optimal pharmaceutical-assisted care. The PDMP monitors the prescribing and dispensing of drugs that contain controlled dangerous substances (CDS) and is a critical tool in the context of the opioid overdose epidemic in Maryland.

The PDMP is a core component of Maryland's strategy for reducing opioid drug abuse, in support of the recommendations of the State's Heroin and Opioid Emergency Task Force. Having been authorized by law in 2011, the implementation of the PDMP reached an important milestone in 2016, with the enactment of a new law that requires PDMP registration for CDS prescribers and pharmacists by mid-2017 and makes mandatory their use of the system by mid-2018. Coupled with other interventions as recommended by the task force, the PDMP serves as a critical tool in reducing heroin- and opioid-related overdose and death, which have been increasing in Maryland as around the country.

### **CALiPHR**

Maryland has leveraged the open-source popHealth electronic clinical quality measures (eCQMs) solution to build a reporting system called the CQM Aligned Population Health Reporting (CALiPHR) tool. CALiPHR was designed to give Eligible Providers (EPs) and Eligible Hospitals (EHs) the ability to meet Stage 1, Stage 2, and Stage 3 Meaningful Use requirements. The tool allows providers to calculate and report eCQMs, which are used to ensure that health care providers are delivering effective, safe and timely care to patients. EPs must report nine quality measures out of 64 eCQMs, and the reported eCQMs must be from three of the six National Quality Strategy (NQS) domains. EHs must also report 16 eCQMs out of 29 eCQMs. CALiPHR has been approved for 57 of the possible 64 EP eCQMs. EPs and EHs have access to a user portal that allows them to view their respective measure results and patient level data.

To date, 29 Maryland Medicaid practice sites—a total of 200 providers—are contributing patient data to CALiPHR and have the necessary access to run eCQM calculations. Over 600,000 clinical summaries have

been captured since CALiPHR went live in early 2016. There are 36 practice sites with approximately 320 providers who have executed contracts and are in the queue to connect with the tool, with 35 additional practices in discussions with CRISP after having expressed interest in CALiPHR.

In addition to serving as a reporting tool for the EHR Incentive Program, CALiPHR has been designed in such a way to support providers who are participating in other incentive- and value-based payment programs. One major envisioned set of use cases is to support providers participating in the Quality Payment Program, whether reporting eQMs for the Merit-Based Incentive System (MIPS) or as qualified Advanced Alternative Payment Models under MACRA. Additionally, because CALiPHR will be able to accept custom eQMs, it can potentially support other quality initiatives, including the Joint Commission, components under the State's Progression Plan such as the D-ACO model or even an individual health care system's internal quality improvement program.

## **Other CRISP Use Cases**

### ***Hot-Spotting***

CRISP designed analysis and mapping tools for identifying “hot spots” of high utilization and costs at census tract level that were later developed into tools. Both high-granular as well as aggregate mapping and reporting—at the local, regional and state levels—are possible through CRISP's address-level data for encounters. As encounter messages increasingly flow into the HIE, reporting on hospital services, regional or community utilization and trending analysis has become possible. Maryland has explored various use cases for this functionality, including as a tool in support of efforts led by the Local Health Improvement Coalitions under the SHIP (described in Chapter 1).

### ***Care Planning for Super-Utilizers***

Transforming health care across Maryland necessitates the targeting of resources toward individuals with a high level of hospital utilization (“super-utilizers”), whose health and well-being could benefit from care coordination. CRISP has worked with two participating hospitals (St. Agnes and Bon Secours) to pilot the insertion of care alerts in the EHRs of super-utilizers. The approach involves identifying of super-utilizers and writing corresponding care alerts, developing a governance system for the approach and integrating the care alerts into health IT systems. The pilot has demonstrated promising reductions in emergency room visits, imaging and hospital admissions. CRISP is scaling this intervention to other hospitals and working to allow care plans to be viewed directly in an EHR, in addition to the current availability in the clinical Query Portal. These pilots, which were conducted outside of the auspices of the SIM project, served as a springboard for the SIM-funded Care Plan Exchange Report, which is discussed in greater detail in Chapter 3.

### ***Building an Integrated Care Network***

The ICN project is the overarching set of shared health IT infrastructure being developed statewide to support care management by providers and payers toward achieving the Triple Aim. CRISP's Integrated Care Network (ICN) is being developed through cooperation and collaboration to support new population health efforts and care management initiatives. The ICN deploys an overarching set of shared health IT infrastructure to help providers and payers achieve the Triple Aim and the goals of Maryland's All-Payer Model Agreement Progression Plan (see Chapter 2 for more information on the Progression Plan).

The ICN infrastructure will connect providers in multiple settings—from hospitals and physician practices to long-term care facilities—with the necessary information to improve health outcomes and reduce costs by providing tools, data and services to support care coordination. The ICN will result in better coordination for complex patients who use multiple hospitals and health systems and will result in further cost savings by avoiding duplication of effort. The cooperative nature of the ICN project will result in standardization and more complete patient information being available to clinicians and care managers, since individual institutions using just their own data sources often have only partial pictures.

CRISP's Encounter Notification Service, discussed above, notifies physicians, other providers and care managers when patients are hospitalized, and has become a critical coordination service in the State. Work realized under the umbrella of the ICN has facilitated a new web-based capability to proactively manage patient transitions allows a care manager to quickly and efficiently detect recent inpatient and emergency department admissions and recent discharges. High-utilizers and care team members can also be identified through the new capabilities.

In addition, new automated reports have been created that allow physicians and other providers to monitor and improve quality performance, reduce redundant testing and treatment and easily communicate treatment delivered by a physician to other physicians and practitioners. These new capabilities automate physician and other providers' workflow, reducing unnecessary manual work.

Outside of the rubric of SIM, CRISP is currently piloting two key strategies: 1) offering basic care management software as a shared platform; and 2) supporting hospital-selected care management software with data feeds. (See Chapter 3 for additional detail.) Both of these programs will help to create an environment where risk assessments, care plans, care plan updates and other important information and tools can be shared among hospitals, care managers, physicians and other providers involved in the coordinated care of a patient.

CRISP also develops reporting and analytics resources to inform decision-making. These efforts fulfill several different functions, including guiding care coordination, identifying populations, and providing metrics for care monitoring. Analytics data draw from multiple sources including Medicare data, HSCRC case-mix data, census and population data and CRISP reported data and provider panels. These data are enriched with analytics and methodologies such as geocoding.

These investments continually improve the richness of clinical information available at the point-of-care and are critical to the success of Maryland's reform efforts.

## **Emerging and Upcoming Health IT Endeavors**

The field of health information technology is rapidly evolving, with new technologies frequently developed to increase functionality and new opportunities for financing presented. Combined with the multiple state agencies and other entities—including DHMH, HSCRC, MHCC and CRISP—involved in providing leadership on health IT issues, open communication and a streamlined process for prioritizing health IT initiatives are imperative. State agency leadership often analyze health IT opportunities during regular bi-weekly meetings, weighing state priorities for care redesign and transformation; when consensus is achieved, it is communicated to partners, such as CRISP.

Another key part of transformation efforts are the various activities that the State has undertaken to promote the transfer of information between different providers, including health systems, ambulatory providers, health departments and other groups. This extends beyond the ADT data and ENS functionality that CRISP has already developed. CRISP is working toward expanding connectivity to providers beyond hospitals so that ambulatory providers will also be able to transfer information into the system rather than just receive notices. Maryland has supported these efforts through various financial arrangements and incentives, including securing federal funds to support ambulatory connectivity.

CRISP is also working toward developing care plan and risk score functionality for Maryland patients, further augmenting and enhancing the ability of providers to share data with each other and coordinate care. These new capabilities represent a sea change in how providers can work together across offices, systems and even health modalities to enhance care for individuals and are a key underpinning of all transformation efforts in the State.

DHMH has developed several mechanisms for repurposing the public health data collected routinely as part of the programs it administers and finding ways to share and combine them with other State agencies and the general public. SHIP combines 39 data metrics from a variety of public health and partner agency data sets on the areas of healthy beginnings, healthy living, healthy communities, access to health care and quality preventative care. The data in these categories are housed in a public-facing website and are leveraged by local jurisdictions, hospitals and community-based organizations to identify, set and strategize about local population health priorities through community health needs assessments, a local health improvement process. SHIP facilitates population health data surveillance transparency and orients users to focus efforts on risk and protective factors that address population level health improvement.

In concert with SHIP, the Population Health Improvement Plan and accompanying Population Health Measures Project look to bolster the existing framework, utility, and infrastructure in SHIP. (See Chapter 3 for additional information on population health activities.) This is accomplished by identifying metrics that are currently featured or in development for electronic medical records—such as body mass index (BMI) and chronic care plans—and examining their ability to address and fill in the priority area gaps of SHIP. Measures are also evaluated for their alignment with the incentives and goals of the All-Payer Model. This process also includes an exploration of each measure’s capacity to be operationalized and to move beyond measuring solely the process of delivering care (*e.g.*, the act of measuring an individual’s BMI) to measuring the outcomes of care provision (*e.g.*, assessing whether the individual’s BMI was reduced) for both individuals and the population. These metrics are incorporated into state population health processes by leveraging existing measurement mechanisms, including SHIP, EHRs, CRISP and population-level surveys, to address population health improvement priorities. The plan looks to continue to build a data infrastructure that relies upon already-existing data mechanisms, focuses on action oriented population level metrics, and supports the goals of the All-Payer Model.

## Expanding and Sustaining Connectivity

### Ambulatory Providers

Connecting ambulatory providers to Maryland’s HIE lays the foundation for integrating various State-level projects. Such activities include the hospital global budgets and related quality programs under



Maryland's All-Payer Model, care redesign activities for dual eligibles, and the progression of the All-Payer Model. Under these initiatives, providers are motivated to focus on population health and initiate new care management programs. As a result of these processes providers also stand to greatly benefit from ambulatory integration. New ambulatory integration capabilities allow physicians to view clinical data and receive hospitalization alerts. This helps physicians to follow-up with patients who have had an acute episode and reach out to attending physicians; monitor the prescribing and dispensing of drugs that contain controlled dangerous substances; and view more comprehensive patient information including treatments with other physicians and practitioners to make more informed treatment plans.

Practice connectivity is required to develop comprehensive views of patient care as well as to improve care and care transitions. This is especially important as payments shift from volume- to value-based reimbursement. Global budgets incentivize hospitals to encourage and participate in ambulatory data exchange because connectivity offers hospitals important data on patients transitioning from ambulatory to inpatient settings and facilitates transitions of care to reduce costly readmissions.

The State initially targeted hospitals for HIE connectivity because hospital connectivity can be achieved relatively quickly, especially in the context of the EHR Incentive Program. In addition, each connection provides a large volume of data available that in turn supports a shorter "time-to-value" in deploying HIE services. While complete hospital connectivity has been an undergirding asset in offering HIE services, an important need to drive practice-level connectivity has continued to go unmet in part because of barriers related to financing.

Maryland's is focusing is on Medicaid Meaningful Use EPs as a means to help propel larger system transformation. Medicaid EPs and providers eligible to be EPs represent a large percentage of ambulatory providers, with nearly 67 percent of the practices that employ Maryland's 5,099 office-based physicians reporting accepting Medicaid. Because of the EHR Incentive Program, Medicaid EPs are more likely than non-Medicaid EPs to adopt certified EHR technology. The State believes that this is a good population to target for EHR integration with the HIE. Furthermore, CRISP is well-positioned identify and connect these providers. As Maryland's REC, CRISP has worked with Medicaid to identify potentially eligible EPs as well as advanced ambulatory practices. These practices will receive HIE readiness assessments to triage providers and accelerate EHR integration.

Beyond SIM, Maryland received federal funds to address challenges to ambulatory connectivity through a three-pronged approach: 1) EHR integration, 2) Administrative Network Connectivity, and 3) Practice-Level HIE Advanced Implementation Support. To enhance EHR integration, CRISP will enable connectivity to the diverse EHR systems utilized by Medicaid EPs to support clinical quality measurement. This approach will maximize: 1) obtaining clinical data from ambulatory providers; 2) applying this information to calculate clinical quality measures; and 3) supporting additional HIE services to improve care coordination and meet multiple Meaningful Use measures.

While enabling connectivity as described above will greatly further ambulatory practice transformation in Maryland, there are challenges inherent in creating the necessary outbound interfaces. To increase opportunities to obtain relevant data and improve care coordination, Maryland is concurrently pursuing practice-level connectivity by converting data from administrative networks, which route claims between providers and insurance companies. With this capability, these data will be applied to generate near real-time care coordination alerts, populate EHR systems of treating providers and support a range



of other functions such as patient-to-provider relationship-management. These functions build upon the existing foundation of CRISP's ENS. Pursuing the addition of administrative networks is a top priority, as they are a rich source of data, the data already flow from all EP practices, and CRISP can obtain data from many sources with a single connection. In addition, connecting administrative networks to the HIE could benefit the community by using this information to identify gaps in care, improving care delivery and enhancing care coordination.

To date, progress has been made in identifying how administrative data transactions could be used to facilitate encounter notifications and patient-provider relationships, as well as to streamline operational workflows within CRISP. CRISP has encountered some challenges with this approach, which it will continue to assess and address. For example, in some cases—due to exclusivity contracts and how claims are routed from a practice to a payer—only a small percentage of claims from a practice are captured. Additionally, physician data are not necessarily captured in a meaningful format. This will be improved as CRISP continues to build out its provider directory, allowing National Provider Identifiers to be converted into more useful data. Finally, administrative data can suffer from delays in the billing cycle; transactions have been identified as soon as 24 hours but also as old as two months.

CRISP also will directly assist with onboarding activities associated with the range of HIE services. Investment into securing the necessary infrastructure for ambulatory connectivity removes a major barrier toward Meaningful Use; however, true practice transformation requires the integration of health IT-related utilities into a practice's daily workflow. Building on previous engagement activities, these efforts will first establish appropriate data connectivity and validate that information is being shared bi-directionally, then facilitate the development of community-wide partnerships for coordination and measure progress. Teams supporting practice-level engagement will execute against the best-practices guidelines to be developed by CRISP, which will provide a roadmap for optimal use of HIE services based on the practical experience of CRISP's most successful users.

### **Skilled Nursing Facilities**

As discussed in the previous chapter, DHMH invested SIM funding to CRISP to conduct a SNF Conductivity Study to determine the most efficient and effective means of integrating SNF data into the HIE and thereby support the aims set forth under the Progression Plan, the D-ACO model and advancing population health improvement.

# Chapter 5: Maryland Workforce Activities

---

The enhancement of the health care workforce is essential to support and sustain healthcare transformation. Maryland recognizes that the success and sustainability of the All-Payer Model requires more than the reformation of health care payment systems, orientation towards population health management and improvement, and a robust health information technology system. It also requires an empowered and engaged workforce in order to meet the health needs of Marylanders. A strong workforce will help to reduce the overall cost of care and improve the comprehensive quality of care both inside and outside the hospital.

## **The Importance of Health Care-Related Jobs to Maryland Workers**

The Bureau of Labor and Statistics projects that in the next ten years, four of the five fastest growing occupations will be related to healthcare. This is important for Maryland because the health service industry is predominant, and hospitals are the largest employers in many jurisdictions. Hospitals are well-positioned to enhance their workforce by creating job opportunities to improve population health, partnering with entities to provide workforce development training and improving the training of the physician workforce to integrate into the transformation of health care in Maryland catalyzed by the All-Payer Model.

In 2014 education and health services made up 20 percent of the private employment sector in Maryland. In addition, in 2015, the Johns Hopkins Hospital and Health System (JHHS), University of Maryland Medical (UMMS), MedStar Health, and LifeBridge Health all ranked in the top 20 employers in the State across all employment sectors.<sup>27</sup> Projections from the Maryland Department of Labor, Licensing and Regulation, indicate that between 2015 and 2017, Maryland is poised to see a 4.62 percent increase overall in the health care and social assistance industry. Driving this growth is the anticipated 5.57 percent growth in ambulatory health care services followed by social assistance and hospital growth at 4.34 percent and 3.59 percent, respectively. These numbers anticipate a shift in health care need towards ambulatory and social services care and underscore the urgent need to adapt the workforce in a parallel manner.

Supporting the aims of the All-Payer Model will require innovative strategies to train, recruit, hire, professionally develop and support the State's workforce. To this end, Maryland plans to: 1) elevate and adapt existing workforce infrastructure such as Graduate Medical Education (GME); 2) formalize new workforce sectors with community health workers (CHWs); and 3) explore new approaches for developing and employing a workforce through initiatives such as the Population Health Workforce Support for Disadvantaged Areas Program (PWSDA). These efforts throughout Maryland innovate and adapt existing pipelines for the health care workforce and build upon the health care infrastructure to meet the changing needs of patients, providers, and payers in Maryland. To this end, DHMH and the HSCRC, in partnership a wide variety of stakeholders across the health care spectrum, have begun to

---

<sup>27</sup> Maryland Department of Commerce

explore, strategize and make recommendations regarding next steps for Maryland to undertake in order to enhance its existing workforce and support the goals of the All-Payer Model.

## **DHMH Loan Repayment and Other Workforce Development Programs**

Educating providers on existing workforce development programs, which are administered through Department of Health and Mental Hygiene's (DHMH) Office of Population Health Improvement (OPHI), is an important step towards meeting healthcare workforce goals of the State. The intent of the workforce programs are to improve accessibility and quality of care by creating an increase in health care providers through incentive programs who serve in rural and underserved areas of the state, with the ultimate goal of recruiting and retaining primary care physicians into Maryland. There are currently \$400,000 in loan, tax credit and professional visa programs available. The State Loan Repayment Program offers educational loan repayment to approximately 30 physicians annually; ranging from \$20,000-\$50,000 per recipient. Separately, the Maryland Loan Repayment program offers educational loan repayment to an additional 30 recipients; ranging from \$10,000-\$40,000 annually. The OPHI Workforce Development Program also sponsors 30 J-1 visas annually to doctors from other countries. Moreover, OPHI will be investing approximately \$350,000 into rural healthcare programs through the Rural Health Prosperity Fund.

## **Graduate Medical Education**

Graduate Medical Education (GME) is the medical training received after the completion of medical school, which strives to prepare the physician workforce to serve the health care needs of Maryland and beyond. Through combined efforts by UMMS, JHHS and MedStar hospitals, physicians are trained in one of over 40 Accreditation Council for Graduate Medical Education (ACGME)-approved GME programs. In 2013 alone, these GME training programs graduated 2,759 residents in 61 residency specialties.<sup>28</sup> The total cost to train the residents totaled \$851 million, or 6.1 percent of total inpatient and outpatient revenue for 2013.<sup>29</sup> This approximates a cost of \$308,000 per resident for both direct medical education cost (DME) and indirect medical education cost (IME) and highlights Maryland's substantial commitment to GME.<sup>30</sup>

Maryland has a proud and unique history of GME. It is home to the nation's oldest public medical school, the University of Maryland School of Medicine, and the nation's first residency program at the Johns Hopkins University School of Medicine. GME in Maryland is bolstered by a robust infrastructure and unique financing methodology.<sup>31</sup> In the past, GME programs have focused heavily on providing training for inpatient specialists. As the incentives and accountability structures for providers are leveraged and adapted. One of the challenges moving forward will be to assure that equitable time, effort, and financing are directed at ensuring that Maryland is preparing a sufficient number general

---

<sup>28</sup> GME report, HSCRC data 2015.

<sup>29</sup> GME report, HSCRC data 2015.

<sup>30</sup> GME report, HSCRC data 2015.

<sup>31</sup> GME report, HSCRC data 2015.

practitioners through the State's GME programs to support the expansion of care in the ambulatory space.

The aims of Maryland's GME programs are aligned with GME programs across the country. Specifically, Maryland's GME program aims to prepare and empower a physician workforce to serve the health care needs of the population. Additionally, the goals and actions of Maryland's GME programs contribute to advancing the goals of the All-Payer Model. This is especially evident in the following recommendations for augmenting the capacity of the GME program to adapt and support efforts such as ensuring access to appropriate providers and care supports, as well as preparing new providers to prepare for eventual participation in Maryland's Duals Accountable Care Organization and Comprehensive Primary Care innovations.

### **GME Financing Background**

Traditionally, GME financing is subsidized through direct and indirect Medicare payments to hospitals. GME programs are reimbursed by Medicare for DME and IME, based on a per-resident amount and resident-to-bed ratio calculation, respectively. Additionally, the number of GME residency positions available per GME program is capped by Medicare. Any GME program requiring an excess of that cap must be funded by the GME program site.

In contrast to this traditional funding mechanism, Maryland's GME programs are financed through the All-Payer-Model. The HSCRC considers GME a core component of hospital costs and therefore integrates the overall cost of GME programs—including DME and IME costs—into the rate structure that it designates for each hospital. All payers reimburse Maryland hospitals for GME programs through the HSCRC rate structures. If a GME program requires an adjustment in the rate it receives for GME—for example, due to the need for more residency positions—the hospital's entire rate structure set by HSCRC must undergo a full rate review.

### **GME Innovation**

Recognizing that the success of Maryland's All-Payer Model requires workforce development and alignment between GME programs and the new paradigm of care, DHMH convened an Innovations in Graduate Medical Education (IGME) Workgroup (the Workgroup) throughout 2015. While this was not a SIM initiative, the Workgroup was tasked with developing a five-year plan to provide strategic direction for how GME programs can align with the goals of Maryland's All-Payer Model and continue to sustainably promote health transformation in Maryland.

The Workgroup was chaired by leaders from the University of Maryland School of Medicine and Johns Hopkins University School of Medicine, staffed by DHMH and HSCRC, and included stakeholder representation from the community, government, philanthropy and industry leaders. The Workgroup looked at the cost of GME nationally and in Maryland, considered current funding mechanisms, and assessed the outcomes GME programs in Maryland. In addition to categorizing current activities, the Workgroup considered potential new funding structures, examined recruitment procedures, and explored GME programmatic innovations.

The Workgroup ultimately generated the State's GME Innovation Plan. The plan is a culmination of the guiding document ("The Principles of Redesign"); an all-day summit seeking feedback and input from stakeholders; and, a series of Workgroup meetings focusing background information, presentations and

final report review. The State's GME Innovation Plan (the Plan) was posted for public comment and co-submitted by the HSCRC and DHMH to CMMI in January 2016.<sup>32</sup> In the Plan, the IGME Workgroup identifies the gaps, barriers and challenges that require action to advance GME programs towards the new health care paradigm and achieve the goals of the All-Payer Model.

### **IGME Strategies for Transformation**

In order to accomplish these goals and address the gaps, barriers and challenges identified in the GME Innovation Plan, the IGME Workgroup recommended the following seven strategies be prioritized.

#### ***Coordination of Efforts***

**Continue IGME Workgroup efforts** lead by the State to develop, implement and evaluate a comprehensive strategy for GME in Maryland. This requires DHMH to continue bringing together stakeholders to address the needs of GME programs including expansion of GME beyond the inpatient setting and training for physicians in the social determinants of health and population health outcomes. In addition, it will require the State incentivize primary care and to explore enhancement and adaptation of the financing structure of GME.

#### ***Focus on Population Health***

**Design, develop, and incentivize the use of training programs** that prepare physicians for new health care models focused on modalities of population health management and population health metrics. By leveraging the existing strengths of GME programs in Maryland, this strategy looks to infuse population-level health analytics training, the tenants of quality improvement, and coordinated care approaches into the GME curriculum. This broadens GME program participant's experiences to prepare them to integrate into the new health care paradigm embraced in Maryland.

#### ***Community- Based Training Initiatives***

**Establish and encourage community-based clinical and non-clinical training sites.** Moving outside the inpatient setting allows GME programs to train participants in the integrated nature of health. By providing opportunities for GME program participants to be exposed to the differing needs of populations, the socioeconomic and environmental factors that affect the population's health, and the non-hospital and non-clinical environments that contribute to patient's health, GME program participants are able to receive training that inherently orients towards the goals of the Triple Aim and the All-Payer model.

#### ***Recruitment and Retention***

**Focus recruitment and retention strategies on alignment with population health needs.** This requires a blend of solutions ranging from exposing medical students to the innovations in primary care and community-based venues, realigning loan-based repayment to incentivize primary care, and exploring ways to reduce the disparity in payment for primary care versus specialty care. One solution was promulgated in 2016 in order to provide incentives to preceptors working in areas with health care workforce shortages designation. Senate Bill 411 was passed during the 2016 legislative session, allowing income tax credits to be awarded to preceptors, both nurse and physician, who precept in

---

<sup>32</sup> The full report is available at: <http://dhmh.maryland.gov/GME/Pages/meetings.aspx>.

health care shortage designation areas.<sup>33</sup> This mechanism aligns incentives for the workforce in Maryland with the ongoing efforts of the All-Payer Model to enhance the person-centered approach of health care while leveraging existing provider accountability structures.

### *Resource Utilization*

**Improve the accounting and transparency regarding the costs** associated with providing GME, especially IME cost. Accounting for the real cost of new training and innovations associated with GME programs will be essential to understanding what drives the cost of IME programming and will provide an enhanced understanding of how the cost of GME program education cost varies by training track. This strategy looks to incentivize smarter spending and investment of GME available funding.

### *Partial Rate Review Amendment*

**Amend HSCRC procedures for revising rates attributed to GME** for hospitals to minimize reporting burden for hospitals while maximizing transparency and utility. By engaging in a new strategy of a partial rate-review system, the system can be more nimble in its capacity to meet the needs of GME programs. This will be instrumental in the success of GME programs to assure that they can change, grow, and build robust population-health training infrastructures such as teaching professionals, data systems, and training outside of the inpatient setting.

### *Additional Funding*

**In order to be sustainable, different streams of funding will need to be allocated** to new training models. It will be critical to seek and dedicate funding for new training models for Maryland to educate the physician workforce essential to the success of the All-Payer Model.

Inherent to these goals and strategies is an orientation towards preparing GME programs to integrate into the health care system as it shifts towards the tenets of population health management and improvement, the All-Payer Model and the Triple Aim. By engaging physicians at their point of entry into the health care system, through education that reflects the new goals of population health management and improvement, Maryland will establish a workforce that is prepared to utilize population health metrics, serve patients outside the inpatient setting, and support the goals of the Triple Aim and the All-Payer Model.

## **Workforce Development for Community Health Workers**

There is no standard training curriculum, scope of practice, or accreditation agency overseeing the training or certification of community health workers in Maryland. This lack of consensus and standards creates barriers on both a system and an individual level. Specifically, it creates barriers to formalizing the profession, and on the individual level, it creates barriers for CHWs who may train in one organization and then find that these skills are not considered transferable by other organizations thereby limiting their employment opportunities.

In 2014 DHMH and the Maryland Insurance Administration established a Workgroup on Workforce Development for Community Health Workers (the Workgroup). The Workgroup was formed in response

---

<sup>33</sup> [http://mgaleg.maryland.gov/2016RS/chapters\\_noln/Ch\\_385\\_sb0411E.pdf](http://mgaleg.maryland.gov/2016RS/chapters_noln/Ch_385_sb0411E.pdf).

to a legislative mandate and the recognition that developing the CHW workforce was in alignment with the aims of the All-Payer Model. The aim of the Workgroup was to evaluate the evidence to-date regarding the role, scope of practice, training requirements, and potential certification processes for CHWs as well as to identify barriers within the current system towards developing the CHW workforce in alignment with the All-Payer Model. The Workgroup was also tasked with creating workforce development recommendations regarding CHWs in Maryland.

Representatives from State and local government, payers, community-based organizations, hospitals and CHW coordinators participated in the Workgroup. The Workgroup determined that central to exploring CHW integration into the All-Payer Model and the Triple Aim was gaining an understanding of the roles and competencies necessary for CHWs in Maryland. To this end the Workgroup examined existing national and international CHW standards, training programs, and credentialing structures and payment models. Based on this review of the literature, the Workgroup defined both the roles and core competencies of CHWs, highlighting the key role that CHWs play in care coordination for clients.

Drawing on the experience and models cultivated in other states, the Workgroup determined the following roles and competencies as integral for CHWs in Maryland. These roles and competencies serve as the backbone for the Workgroups recommendations in regards to CHW: training, credentialing, and overall standardization of the profession.

### **CHW Certification**

The Workgroup recommended a two-tiered structure to accommodate the varying levels of education and technical skills that might be necessary for a hospital-based CHW but unnecessary for a community-based CHW. The Workgroup recommended that Tier I certification would require 80 hours of training. Tier II would require an additional 80 hours of training and a practicum, building upon the certification required for Tier I.

The Workgroup recommended the creation of CHW oversight body should be explored. This overseeing body might be tasked with regulating certification, validating curricula and advocating for the profession, among other functions. Furthermore, this body could assist in legitimizing the profession of CHWs, acknowledging that CHWs are integral in achieving outcomes within the health care and social service systems. The Workgroup also recommended that if a formal process were enacted to train and certify CHWs, that Marylanders who are already employed as CHWs—and who meet minimum training and experience requirements—should be grandfathered into the profession.

The Workgroup's final report was submitted to the Maryland General Assembly in June 2015. DHMH's Office of Minority Health and Health Disparities (MHHD), in collaboration with the Maryland Area Health Education Centers (AHEC), have been engaged in the continuation of the recommendations generated by the Workgroup's final report.<sup>34</sup>

---

<sup>34</sup> The report is available at:

<http://hsia.dhmd.maryland.gov/SiteAssets/SitePages/CHW%20ADVISORY%20WORKGROUP/CHWworkgroupreport.pdf>.



## **Maryland Health Services Cost Review Commission Population Health Workforce Support for Disadvantaged Area Programs**

In an effort to further develop a workforce capable of addressing and accomplishing the goals of the All-Payer Model while simultaneously improving health outcomes for disadvantaged communities, the State is pursuing a new model of financing workforce development. The aim of this innovative workforce development program—the Population Health Workforce Support for Disadvantaged Areas—is to:

- Create jobs with sustainable wage structures;
- Hire from within disadvantaged communities; and
- Support the improvement of population health in Maryland.

This initiative is based on the concept that training and hiring individuals from disadvantaged areas: 1) promotes prevention and health education efforts; 2) supports care management and coordination; and 3) engages disadvantaged communities in an array of activities resulting in improved health outcomes.<sup>35</sup> As a result of this funding initiative, hospitals will be able to identify, recruit, train, and hire workers from disadvantaged areas to fulfill positions in care coordination, population health, consumer engagement, and other related positions.

### **Financing**

Beginning in 2016, Maryland committed \$10 million in net revenue from hospital rates to a trust. Hospitals can access these trust funds via a competitive grant process. Applications for funds are reviewed by the HSCRC and a group of subject matter experts in CHW workforce development. Grant funding will be provided to hospitals over a three-year period. Any monies obtained via the grant process must be matched at 50 percent by the awarded hospital. Grant funds can be used to train and hire individuals from specified areas of economic disparity and unemployment in the State as determined by the Area Deprivation Index.<sup>36</sup>

### **Job Creation**

The workforce trained and hired under this initiative is intended to fulfill roles such as care coordinator, health educator, and CHW, as well as emergent roles in the health care setting including: peer recovery supports and community organizers. These roles are highlighted because of their capacity to connect the traditional health care system to community-level health; as well as and their ability to catalyze the integration of the health care system. Grant funding awardees will liaise with community-based agencies and experts in the arenas of recruitment, job skills, and lay health worker training to ensure the sustainability and retention of the workforce being hired.

### **Sustainability and Evaluation**

Demonstrated capacity and commitment on the part of the grant applicant to sustain workforce development efforts past the lifetime of the grant will be an essential component in the awarding of grant monies to hospitals under the PWDSA program. Specifically, applicants are required to discuss in detail the strategies and partnerships they will leverage to retain and support workers who are

---

<sup>35</sup> RFP PWDSA, HSCRC 2016

<sup>36</sup> ADI, <http://www.hipxchange.org/ADI>



recruited, trained, and hired for newly-created positions. This emphasis on sustainability planning highlights Maryland’s commitment to investing in workforce development solutions that empower individuals, leverage community assets, and facilitate the orientation of the health care systems towards population health management. Applicants are also required to demonstrate how they will evaluate the successfulness of their program.

### **Implementation and Fund Disbursement**

The first round of the PWSDA grant offering received a number of applications. Awards were made to both the Baltimore Population Health Worker Collaborative and the Garrett Regional Hospital.<sup>37,38</sup> The PWSDA initiative stands to improve population health in these disadvantaged communities by formalizing the collaboration between community-based organizations, health departments and hospitals that serve the same geographic areas, incentivizing economic empowerment, and increasing the number of people employed in roles—such as care coordinators—that have been shown to improve population health.

Workforce development is critical to the achieving the goals of the All-Payer Model. Maryland is committing resources to envisioning and executing a transformed health care system which amplifies workforce initiatives that show promise in addressing population health management and improvement. This includes supporting existing workforce pipelines such as the GME, cultivating new workforce fields such as CHWs, and championing leadership in the innovation of workforce development with initiatives such as the PWSDA.

---

<sup>37</sup> <http://www.hsrc.maryland.gov/documents/commission-meeting/2016/10-19/HSCRC-Post-Meeting-Packet-%202016-10-19.pdf>

<sup>38</sup> <http://www.hsrc.maryland.gov/documents/commission-meeting/2016/10-19/HSCRC-Post-Meeting-Packet-%202016-10-19.pdf>

# Conclusion

---

At the culmination of its SIM Round Two Design Project, the State is looking forward to both building upon the extraordinary progress achieved under the All-Payer Model, as well as further designing and implementing additional innovations in delivery system reform—including the Duals Accountable Care Organization and the Maryland Comprehensive Primary Care Model s— that will support transformation in the State. These crucial elements of health system transformation in Maryland will be furthered by additional advances in health information technology and an increased focus on population health.

The Department of Health and Mental Hygiene would like to thank the extensive group of Maryland stakeholders who have represented diverse backgrounds and interests critical to improving the quality of care and increasing efficiencies in the State’s health system. The SIM project built upon existing stakeholder engagement activities ongoing under the All-Payer Model. DHMH is proud to have engaged, whether as formal workgroup members or via widespread communications and opportunities for public comment, stakeholders numbering into the hundreds across consumers, payers, health systems, clinical and service providers and state agency representatives, among others. This widespread participation has been, and will continue to be, instrumental in fostering the sustainability of these innovations.

The State of Maryland remains committed to advancing health system transformation, while improving the delivery of person-centered care, increasing excellence in care, and improving the health of its population. DHMH is pleased to submit this report to CMS in anticipation of continuing our partnership toward the successful implementation of the programs described herein.

# Appendices

---

*The following documents are abridged from their original versions. Please visit <https://mmcp.dhmh.maryland.gov/sim/Pages/Home.aspx> for full versions.*

- A. Integrating Care to Meet the Needs of Medicare-Medicaid Dual Eligible Beneficiaries in Maryland
- B. Implementation Plan for Connecting Skilled Nursing Facilities to Health Information Exchange
- C. Maryland Population Health Improvement Plan: Planning for Population Health Improvement
- D. Maryland Population Health Measurement Development
- E. Care Plan Exchange Report

## **Appendix A**

# **Integrating Care to Meet the Needs of Medicare-Medicaid Dual Eligible Beneficiaries in Maryland**

**After the collaborative period of dialogue extending across the course of this SIM project, Maryland created this initial concept paper on the D-ACO model that was shared with stakeholders for public comment in December 2016. DHMH received numerous comments from interested stakeholders, and has begun to address the concepts by following up with stakeholders and considering the impact of comments on the initial design. DHMH plans to incorporate the comments into the concept paper in the beginning of 2017 with the intent to put out an updated concept paper for further public discussion.**

**With potential implementation of the D-ACO model to begin in 2019, DHMH will reconvene its stakeholder workgroup in 2017 and 2018 to focus on further design work, formal model and waiver development, and identification of potential entities to serve as D-ACOs. During this period, DHMH will revisit the updated concept paper and get further stakeholder buy-in and validation on an updated draft.**

## **Maryland Department of Health and Mental Hygiene**

### **CONCEPT PAPER**

#### **Integrating Care to Meet the Needs of Medicare-Medicaid Dual Eligible Beneficiaries in Maryland**

##### **I. Opportunity for Innovation in Care Design**

Medicare-Medicaid dual eligible beneficiaries in Maryland are a high-need, high-cost population. Many face complex medical, social and/or behavioral challenges that demand extraordinary care coordination efforts to generate favorable outcomes. Dual eligible beneficiaries cost each program much more per capita than do other beneficiaries, often consuming services that could be avoided with the right early and sustained interventions. Designing a model to improve their care, their health outcomes and their quality of life, while also containing spending at both the federal and state levels, requires the alignment of both programs to avoid perverse incentives that lead to needless costs and cost shifting.

To date, Maryland has exempted dual eligibles from its Medicaid managed care program, HealthChoice. Recognizing that close alignment with the State's all payer model is beneficial for the dually eligible population, the Maryland Department of Health and Mental Hygiene (DHMH) proposes a Medicare-Medicaid Duals Accountable Care Organization (D-ACO) model of value-driven care coordination to serve Medicare-Medicaid dual eligible beneficiaries. The model is innovative, though the key elements are built upon recognized models - Patient-Centered Medical Home (PCMH) and the Medicare Shared Savings Program (MSSP) Accountable Care Organization (ACO). The model is a form of value-based purchasing, pursuing the benefits of provider accountability for cost and quality while emphasizing the centrality of primary care. This measure is fundamental to reducing the rate of growth of health spending in Maryland.

The initiative will be implemented in 2019, initially in certain geographies – Baltimore City, Baltimore County, Montgomery County, and Prince George's County. These areas are home to approximately 52,000 Marylanders who receive both Medicare and full Medicaid benefits ("full dual eligible beneficiaries") and who are not intellectually or developmentally disabled (I/DD). This initiative targets the estimated 47,000 persons within this group who receive Medicare benefits through original fee-for-service Medicare. The rest of this group are enrolled in Medicare Advantage (MA) plans and will not be impacted by the model unless any disenroll from MA and return to original Medicare.

The proposed model will integrate seamlessly with the broadening of the global budget concept beyond hospital expenditures to encompass total cost of care (TCOC), per beneficiary, for Medicare outlays, and for dual eligibles, both the Medicare and Medicaid outlays. The D-ACO

Model will incorporate a combined TCOC of Medicare and Medicaid for dual eligibles and the calculation methodologies will be aligned.

The innovation described in this document will institute powerful incentives for controlling the total cost of both Medicare and Medicaid for the affected population. Approximately \$2 billion of combined annual program spending, historically all fee-for-service with incomplete coordination, will come under the new model's control mechanisms. The D-ACO Model will be one linchpin to the success of the All-Payer Model.

The cornerstone of the care delivery redesign within the D-ACO is the Person-Centered Health Home (PCHH). The PCHH incorporates elements of the Maryland Comprehensive Primary Care Model program being developed by DHMH and will include similar features to Maryland's Chronic Health Home program, which was established under Section 2703 of the Affordable Care Act, and serves a small segment of the population with diagnoses of serious persistent mental illness, serious emotional disturbance, and opioid substance use disorders.

The person-centered care redesign will be bolstered with payment innovations to incentivize the investments and behaviors needed to produce quality and cost-effective outcomes.

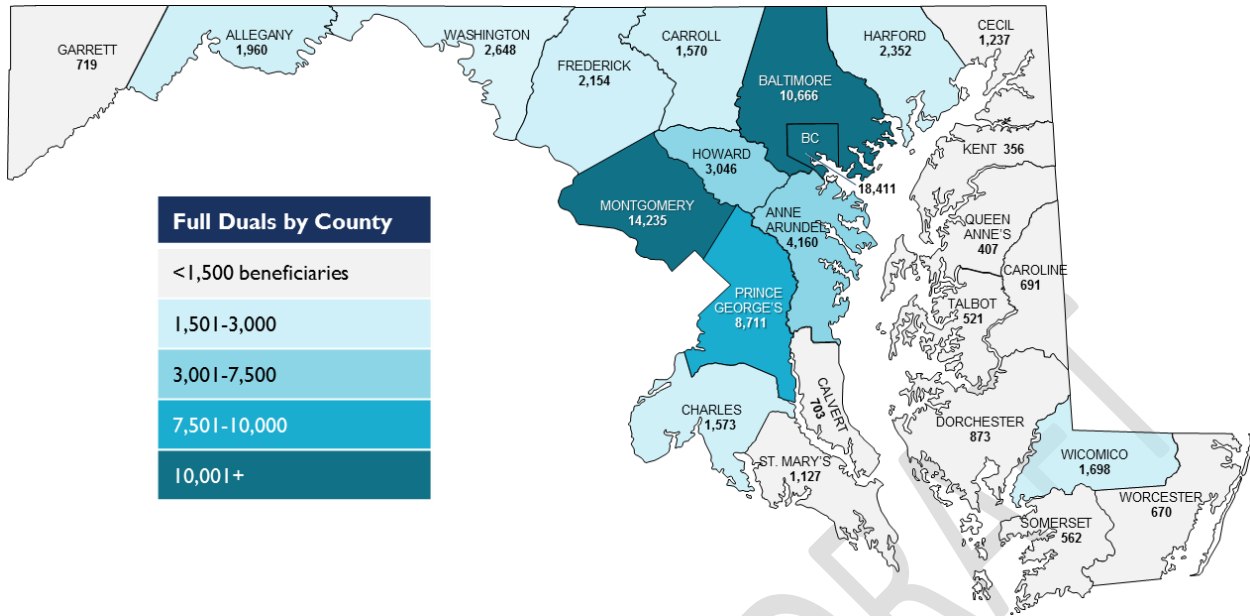
The remainder of this paper outlines key policy and operational components for a program designed to address the health and social needs of dual eligible beneficiaries in Maryland. First, we present some information on the characteristics of Maryland's dual eligible beneficiaries.

## **II. Overview of Dual Eligible Beneficiaries in Maryland**

As of FY 2016, 81,362 full dual eligible beneficiaries, excluding the intellectually or developmentally disabled (I/DD), reside in Maryland. The four jurisdictions in which the proposed D-ACO Model will operate are home to 64% of this population: Baltimore City (23%), Baltimore County (13%), Montgomery County (17.5%), and Prince George's County (10.7%).

In CY 2012, 62% of full-benefit dual eligible beneficiaries were female and 55% were 65 and older. However, the majority (57%) of male dual eligible beneficiaries were under the age of 65 and the majority (62%) of female dual eligible beneficiaries were 65 and older.

More than half (55%) of newly enrolled full-benefit dual eligible beneficiaries in CY 2012 were under the age of 65, while 56% of those continuously enrolled (meaning there was no break in their dual eligibility benefit determination in CY 2012) were 65 and older. More than two-thirds (70%) of CY 2012 full-benefit dual eligible beneficiaries were eligible for Medicare before obtaining Medicaid coverage.



Total Medicaid expenditures for full-benefit dual-eligible beneficiaries rose 10%, from \$1.48 billion in CY 2010 to \$1.62 billion in CY 2012. Medicare expenditures grew at a slower rate of 4% during this period. On average, Medicaid paid slightly more per person per year than did Medicare.

Individuals who use long-term services and supports (LTSS) through either home- and community-based services (HCBS) or extended nursing facility stays are among the costliest dual eligible beneficiaries. In CY 2012, HCBS users' combined Medicaid and Medicare spending was almost \$50,000 per person; while for those residing in nursing facilities the cost exceeded \$100,000. Other dual eligibles who reside in the community setting and are not dependent on HCBS, referred to as community dwelling, cost just under \$19,000 per person per year.

Approximately 10% of full dual eligible beneficiaries statewide are currently enrolled in Medicare Advantage plans and will not be affected by the D-ACO Model.

### III. D-ACO Program Theory of Change

Currently, Medicare-Medicaid dual eligible beneficiaries in Maryland are served in a largely uncoordinated fee-for-service delivery system. As a high-cost, high-need population, Medicare-Medicaid dual eligible beneficiaries' needs span beyond primary, acute, and chronic care, often including behavioral health, long-term services and supports, and other social supports. However, the services intended to meet these needs are not delivered in a coordinated manner; in fact, many assessments, care planning functions, and other activities overlap or are duplicated to various degrees between Medicaid and Medicare. The present system creates a multitude of care management initiatives, processes and programs, none of which addresses the full spectrum of Medicare-Medicaid dual eligible beneficiaries' needs longitudinally.



The D-ACO Model is designed to create a holistic, sustained care coordination intervention that bridges the divide between social determinants, long-term care, behavioral health, and physical health by vesting the care coordination function in a single entity. The D-ACO Model will financially align Medicare and Medicaid services. It further develops a unified and comprehensive assessment inclusive of common elements to address behavioral health, social services, and long-term care, creating accountability and responsibility for that spend, and linking its delivery to the delivery of traditional health care services in a care coordination program.

The D-ACO model transforms care delivery for dual eligibles by triangulating each beneficiary with the care coordination and management supports and their clinical and social needs. While this concept can be associated with fragmented care, the D-ACO model avoids such potential by adding the following elements: collaboration across specialties via medical homes, interdisciplinary care teams, and care management that is integrated and delivered at the clinical setting. All of these elements are scientifically validated mechanisms to ensure coordinated care, improved health outcomes, and reductions in hospital admissions and emergency department visits.

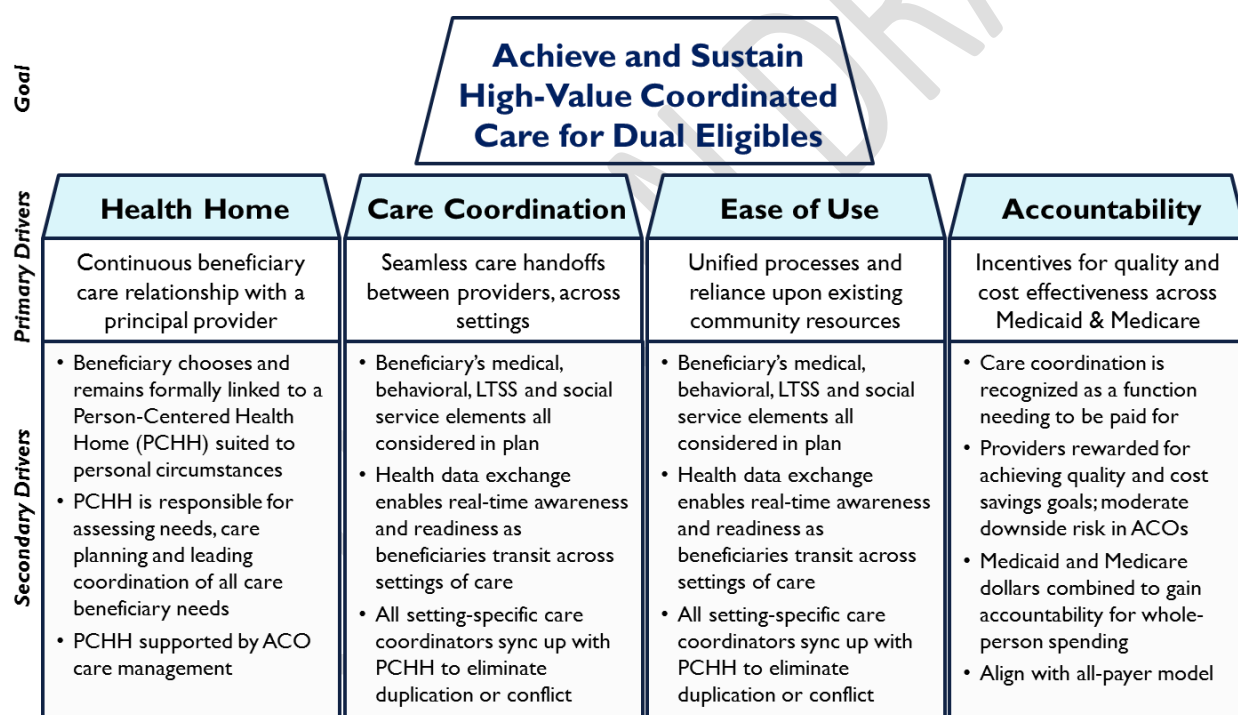
The D-ACO model offered here introduces care coordination along with incentives for providers to meet the needs of dual eligible beneficiaries while promoting efficiency and quality:

Current FFS System		D-ACO Model
Many beneficiaries lack a go-to provider	-----	Beneficiary-designated provider who is care coordination lead
Discontinuity in care, especially across physical, behavioral, LTSS and social domains	-----	Seamless coordination across health care settings and spanning to include social supports
Provider incentives reward volume and intensity of services	-----	D-ACO materially accountable for total cost of care plus quality
Repetition of assessments, services, testing, procedures	-----	Care coordination tools enable access to data -- assessments, tests, medical encounters Promote standardized processes and assessments
Lack of provider capacity to coordinate care	-----	Incentivize providers and offer resources to coordinate care

Thanks to the contributions of a stakeholder work group that has convened monthly since January 2016, the D-ACO model follows guiding principles that emanate from a goal of **achieving and sustaining high-value coordinated care for dual eligible beneficiaries**.

As depicted in the driver diagram below, the D-ACO program will:

- leverage the person-centered health home concept to ensure each beneficiary is connected and engaged to a designated provider,
- implement new care coordination techniques in which key providers work across disciplines to address the beneficiary's needs, and
- offer unified processes to reduce duplicative assessments, care plans and diagnostic tests, and enforce accountability through carefully measuring both quality of care and the total cost of care.



For beneficiaries, the model will improve beneficiary engagement, the experience of care, improve access to care, improve health outcomes, and raise quality of life. The model will align financial incentives across Medicare and Medicaid to reward higher quality of care and support providers via health information exchanges, analytical tools, and administrative aids.

The D-ACO model is designed to be practical to mesh with other population health efforts that providers are already pursuing. The proposed models are designed to draw upon existing

community resources that beneficiaries already depend upon. Design elements that will serve to achieve the goal of achieving sustained, high-value, coordinated care include:

- A network of person-centered health homes (PCHHs) capable of handling the clinical needs – including physical, behavioral, long term care and social supports – of dual eligible beneficiaries.
- Data infrastructure to inform D-ACOs and PCHHs of clinical events and data analytics and exchange capabilities driven by D-ACOs to inform PCHHs at the practice level about their performance and targeted approaches to engaging with and addressing the needs of beneficiaries.
- Individualized interdisciplinary care teams (ICTs) formed by a selected group of clinicians, social support resources, and care managers to address the needs of the beneficiary and to guide the care planning process.
- Care management and care coordination roles and functions that are carried out by the D-ACO and PCHH, respectively.

The design will ensure that clinicians can also qualify for Advanced Alternative Payment Models (Advanced APMs) under MACRA's Quality Payment Program.

These concepts are detailed in the following sections.

#### **IV. D-ACO Care Model Design**

This section presents the concept of the D-ACO and the PCHH and then speaks to the elements of care redesign. Maryland DHMH proposes an accountable care organization model design, titled a Medicare-Medicaid Duals ACO or D-ACO, for an initial set of counties – selected for population density and availability of health systems willing to engage. The D-ACO model will employ a shared savings and care coordination services payment system built upon rigorous care coordination model including support from and participation in state-operated data sharing programs.

Key characteristics of the D-ACO:

- Have a broad network of PCHH and specialty providers representing all services dual eligible beneficiaries use – physical health, behavioral health, LTSS – that are traditionally covered Medicare and Medicaid benefits, plus ways to connect beneficiaries to social supports and community services.
- Embrace and incorporate the PCHH model of care by performing care management and quality improvement activities, and measuring their effects.
- Support participating clinical practices to perform optimally, both by aiding in the process of care coordination and by supplying data and analytics – to both clinically

manage their patient panel and coordinate their care as well as to indicate their performance on defined process and outcome metrics as compared to their peers.

- Ensure that providers representing services utilized by dual eligible beneficiaries – including behavioral health and long-term care services – are leveraged in care delivery policy-making and program operations, such as by reviewing and approving policies, overseeing case management functions, and engaging in discussions on specific beneficiary case examples.
- Accept a minimum designation of at least 2,500 full dual beneficiaries.

In the first two years of the program, D-ACOs will have the opportunity to earn rewards for producing savings and quality gains for the beneficiaries they serve, and will be expected by the third year to take meaningful risk for financial losses that may arise.

Embedded in the D-ACO is an integrated provider network with features similar to the ACOs in the MSSP but exhibiting a number of crucial differences described further herein. As part of the integrated provider network, D-ACOs will be required to enter into shared savings participation contracts with PCHHs, who will be central to beneficiaries' care delivery and care coordination – encompassing physical, behavioral, LTSS and social supports.

D-ACOs will operate in regions with high concentrations of dual eligible beneficiaries and where conditions are favorable for D-ACOs to form – namely areas that have the providers willing to form a D-ACO and the beneficiary base to make it worthwhile from a business standpoint. Initially, the D-ACO initiative will focus on Baltimore City, Baltimore County, Montgomery County, and Prince George's County – where more than three-fifths of all full dual eligible beneficiaries reside. The counties the initiative focuses on could be expanded upon based on the degree of provider engagement and success of the initiative. For instance, adding just the two neighboring counties of Anne Arundel and Howard would bring nearly 10 percent more of the population into the program.

D-ACOs may define their own service areas within the defined regions, provided those areas are contiguous and non-discriminatory. More than one D-ACO will be offered in all areas, to ensure competition between D-ACOs, to enable clinicians associated with competing health systems to engage, and to ensure that most beneficiaries will continue to have access to current providers. However, DHMH expects to limit the total number of D-ACOs, in the interest of limiting the State's administrative burden.

The D-ACO model will leverage existing ACOs that have formed to serve Medicare fee-for-service beneficiaries generally. Based on CY 2012 data on all full-benefit Medicare-Medicaid dual eligible beneficiaries, most (70%) dual eligible beneficiaries were eligible for Medicare before obtaining Medicaid coverage. A large percent of current full Medicare-Medicaid dual eligible beneficiaries eligible for the D-ACO model are likely engaged in Medicare ACOs. Twenty-

six MSSP ACOs have formed in Maryland and some of them are interested in becoming D-ACOs, too.<sup>1</sup> New ACOs may form just to serve dual eligible beneficiaries; these D-ACOs will not be required to participate in MSSP to qualify as D-ACOs.

It will be to the advantage of the dual eligible beneficiaries and their families, given their diverse health and social concerns, for D-ACOs to differ in some ways CMS's Medicare ACO definition. It is especially important to give prominence to LTSS and behavioral care providers for the large numbers of dual eligible beneficiaries in need of those services. To qualify to serve dual eligible beneficiaries or to become a D-ACO, these entities will also have to demonstrate an understanding of dual eligible beneficiaries and their physical, behavioral, social, and long-term services and support needs.

#### **a. D-ACO Shared Savings Network Standards**

The D-ACO model has been selected, as opposed to either a closed-network, capitated model or a managed fee-for-service model because of a key feature that is exclusive to an ACO model: access to coordination and care management for a fully integrated network of providers without any limitation on the beneficiary's choice of providers.

D-ACOs must furnish a network of providers with agreements for all services covered by Medicare Parts A and B, and by Maryland's Medicaid program, including all long-term services and supports for the non-I/DD population. D-ACOs will be required to offer broad networks to include a diverse and large number of PCHHs and specialists. D-ACOs will also be responsible for coordinating services when beneficiaries access care outside of the participating provider network.

Beneficiaries will either designate a D-ACO on their own or the State will do that for them, as detailed in Section VI below. The beneficiary designation process will be based on an intelligent methodology whereby beneficiaries will be connected to D-ACOs that offers the most suitable network for each individual based on historical utilization patterns (found in claims data) and other factors. It will be in the best interest of the D-ACO to offer a network that is broad enough so that beneficiaries, during the designation process, have access to a PCHH and complete network of participating specialists with whom they have a treatment history and geographic proximity.

#### **b. Person-Centered Health Home**

The cornerstone of the model is a Person-Centered Health Home (PCHH) that will serve as the beneficiary's designated provider and constant care coordination resource.<sup>2</sup>

---

<sup>1</sup> Based on CMS's 2016 Medicare Shared Savings Program (MSSP) ACO programs available at: <https://www.cms.gov/medicare/medicare-fee-for-service-payment/sharedsavingsprogram/acos-in-your-state.html>.

The goal of the PCHH is to recognize the individual needs of the beneficiary and deliver integration of physical health, behavioral health, long-term services and supports, and social supports. The D-ACOs will support the PCHH with real-time data, beneficiary needs assessments, and guidance on where best to target resources for the greatest impact.

Owing to their complex array of needs, not all dual eligible beneficiaries use traditional primary care physicians as their principal source of care. Many dual eligible beneficiaries rely upon multiple other types of clinicians. Therefore, PCHHs will not be limited to traditional primary care providers; a behavioral health, specialty medical, or long-term care provider that serves as the main source of care for a beneficiary may serve as the PCHH as well. This is a key distinction between the D-ACO program and other programs that use primary care medical homes (PCMHs) that emphasize a relationship with a traditional primary care provider and typically focus on medical care over other needs.

DHMH expects the PCHHs to meet standards of accreditation such as those applied to Primary Care Medical Homes set by national accreditation bodies, though some deviations may be warranted.<sup>3</sup> In Maryland today, 1,248 practices are recognized as accredited PCMH sites by the National Committee on Quality Assurance. Many of these sites were part of Maryland's Multi-Payer Patient Centered Medical Home Pilot and CareFirst Blue Cross Blue Shield's PCMH Strategy. The majority of these practices (82% or 982 practice sites) attained Level III recognition, the highest level of accreditation.

Person Centered Homes that will be created under the Maryland Comprehensive Primary Care Model could serve as PCHHs within D-ACOs, as long as they meet the requirements applicable to dual eligibles. While beneficiaries accessing services through existing programs will not be removed from accessing these benefits, policies will be further developed to ensure providers are unable to expense the already covered service or care coordination and management activities to the D-ACO model.

The D-ACO is the entity that will hold a contract with CMS and DHMH. While PCHHs and all other providers will continue to receive fee-for-service payments, D-ACOs will also be required to compensate the PCHH entity for care coordination services and to share any awards received for achieving savings and quality goals with the PCHH and other participating providers. The model allows for variation in the level of financial and administrative support the D-ACO gives to each PCHH based on each practice's capacity for delivering care coordination functions. In

---

<sup>2</sup> The PCHHs envisioned in this model are distinct from Maryland's chronic health homes authorized by Section 2703 of the Affordable Care Act. The latter will be eligible to apply to become PCHHs, though.

<sup>3</sup> The Patient Centered Medical Home (PCMH) concept is managed by the Agency for Healthcare Research and Quality, at a Federal level. The National Committee on Quality Assurance (NCQA) and The Joint Commission are national, non-profit, governing boards that develop, maintain, and administer PCMHs and provides accreditations and guidance on standards.

their proposals, D-ACOs will describe their methods for paying PCHHs for care coordination and for sharing savings/losses with PCHHs and all other participating providers.

The risk and rewards section below (Section VII) details how rewards will be shared and penalties will be placed to D-ACOs. D-ACOs will be required to flow some of their income to PCHHs based on the extent of care coordination duties that is delegated to the PCHH practice.

### **c. Care Management and Coordination**

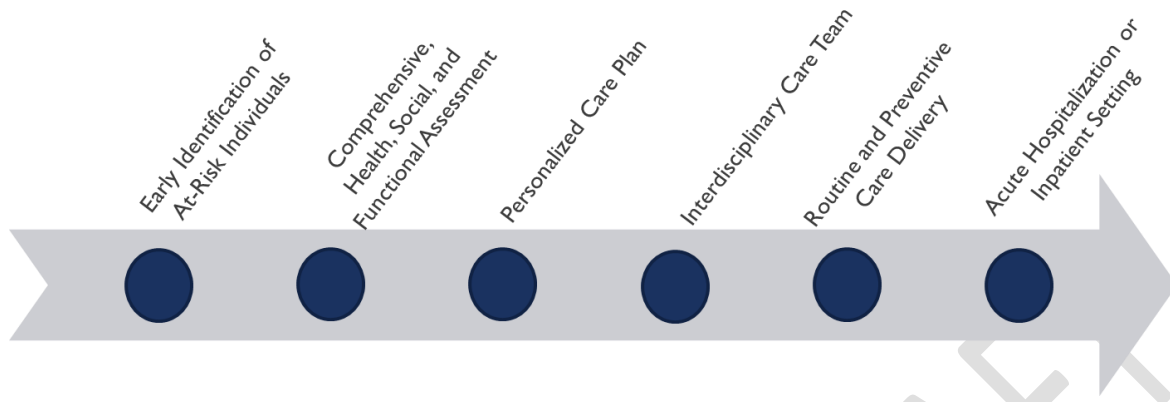
For the D-ACO model, DHMH and stakeholders have delineated the roles and definitions of care management and care coordination as follows:

- Care Management is a process designed to assist PCHHs and their support systems in managing their medical, social, and behavioral health conditions more efficiently and effectively and as possible achieve self-direction and self-management.
- Care Coordination is the tactical and operational organization of beneficiaries' care activities; this includes family caregivers. Coordination will address the social determinants of health and facilitate the delivery of appropriate health care, long-term care, and supportive social services.

To this end, the D-ACO model generally assumes the care management function to be carried out by the D-ACO and the care coordination responsibilities to be performed at the PCHH level. However, variation will be permitted, provided that the D-ACO is answerable for meeting the demands of the contract with Medicaid and Medicare. The exact division of responsibilities between D-ACO and PCHH will be flexible so that each D-ACO will determine the assignments in partnership with its PCHHs.

The care management and care coordination process will proceed according to a structured timeline from beneficiary designation through ongoing support. The next section describes the interactions between the beneficiary, the D-ACO, and the PCHH along the health care continuum.

The proposed diagram and process serves as an example of how the care continuum could be designed to avoid negative and unintended health outcomes, which are also addressed. We understand that in real world situations, the process for any individual may have to start at any point along the continuum.



- 1) Early identification of individuals at risk for physical health and social needs that are often co-morbid to behavioral health deterioration, substance abuse disorders, and the onset of long-term services and support needs
  - i) D-ACOs will be furnished with Medicaid and Medicare claims data for each beneficiary they are designated. D-ACOs operate tools that enable data exchange via CRISP<sup>4</sup> and population health analysis to categorize beneficiaries as low, moderate, or high-risk for the purposes of care coordination interventions.
  - ii) PCHHs receive regularly updated reports with a list of their highest risk patient panel to engage with and ensure access to clinical and social services required to close gaps in care.
- 2) Comprehensive medical, functional and social assessments
  - i) Dual eligible beneficiaries in Maryland are currently accessing assessments through various Medicaid state plan and waiver programs, programs specific to Medicare, and facility-specific assessments. Many of these assessments are disjointed, producing redundancy in assessments and sometimes in the creation of multiple care plans for one individual when they span across Medicare and Medicaid. Existing assessments and care plans will be evaluated to identify how to best incorporate within the care management and coordination efforts of the D-ACO model.
  - ii) It is the intent of the D-ACO program to enable access to information on assessments conducted between the Medicare and Medicaid programs and to develop a unified structure whereby redundant data elements are removed and assessments are integrated and simplified.

<sup>4</sup> CRISP (Chesapeake Regional Information System for our Patients) is Maryland's health information exchange.



- iii) While additional assessments will need to be conducted for specific events and care plans will need to be updated, the intent is avoid duplication and repetition and give both the caregiver and the beneficiary a much smoother experience of care.
  - iv) The overall assessments in the D-ACO initiative will include several components, and can incorporate elements already dealt with in long-term care needs assessments such as MDS and interRAI:
    - (1) Clinical needs including long-term care and behavioral needs
    - (2) Mobility including physical access within the beneficiary's home, to their health care settings and to social settings
    - (3) Social needs including housing, transportation, and nutrition
    - (4) Quality of life
  - v) D-ACO care managers, at the outset of beneficiary assignment and through the beneficiary engagement process, collect and compile all available and relevant assessment information into a centralized assessment. The D-ACO is responsible for ensuring the assessments are updated annually and more often, based on specific health events.
  - vi) PCHH care coordinators conduct face-to-face assessments based on prompts from the D-ACO and the beneficiary's clinical history and previous assessment results.
- 3) Personalized care plan
- i) PCHH care coordinator develops the care plan with the beneficiary and his/her family or caretaker. For higher risk D-ACO beneficiaries, the D-ACO will be required to complete the care plan and required updates in person with the beneficiary and caregivers/family. In addition, for higher risk beneficiaries, the care plan will be updated at least semi-annually. PCHHs will also routinely review the care plan with the beneficiary and family.
  - ii) D-ACO care managers regularly access a centralized care plan and continually monitor the care plan to ensure the beneficiary has the means to achieve their goals.
  - iii) D-ACO care managers will initiate a reassessment and update the care plan following beneficiary or caregiver request or the occurrence of any major health events, such as hospitalization, major surgery, admission to nursing facility, etc.

- iv) Many dual eligible beneficiaries are enrolled in HCBS and other LTSS programs to address their long-term care needs. As such, beneficiaries in the D-ACO model will likely be engaged in care, have an assessment, and may be working toward achieving goals they have formalized in care plans. These care management and care coordination efforts will continue and will be leveraged in the care planning process.

4) Interdisciplinary care team

- i) Each beneficiary surpassing a threshold indicative of a need for ongoing care coordination will be assigned an interdisciplinary team that consists of LTSS waiver program care coordinators, behavioral health specialists, and other need-specific providers.
- ii) Throughout the continuum of care, the ICT will be alerted of changes in the beneficiary's care and will huddle to assure the care plan and make clinical and coordination decisions. The ICT should be led by the PCHH care coordinator and will be responsible for engaging with the beneficiary and/or family representatives throughout the care delivery continuum.
- iii) D-ACO care managers are responsible for defining the individualized, interdisciplinary care team.
- iv) When there is a change in beneficiary status, the PCHH care coordinator convenes the ICT to review the clinical approach and coordinate services needed by the beneficiary. The PCHH makes warm hand-offs to specialists and other providers in the ICT to ensure engagement of the beneficiary and all providers in the care plan.

5) Routine and preventive care delivery

- i) D-ACO care managers continually identify wellness and health promotion activities that would be most useful to the beneficiary. D-ACOs also ensure that the beneficiary has received access to needed and appropriate services.
- ii) PCHH care coordinators facilitate scheduling of appointments, coordinate access to services, identify any new gaps in care, and connect beneficiaries to appropriate resources including those for home- and community-based services.

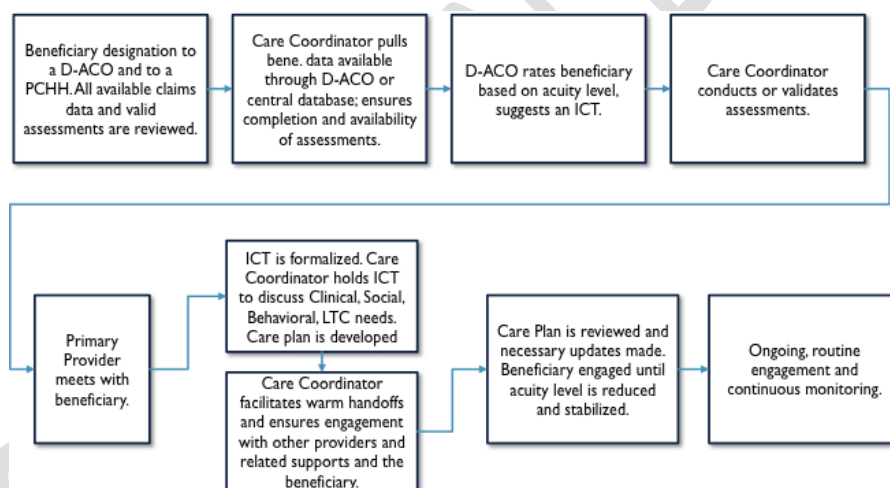
6) Acute hospitalization or inpatient setting

- i) D-ACO care managers receive alerts and notify PCHHs of triggering events in real time. The D-ACO care managers work with PCHH care coordinators and

hospital discharge planners to assure smooth transition from the inpatient setting to appropriate post-acute care.

- ii) PCHH care coordinators, in offices that are connected to CRISP's encounter notification system, receive the same real-time alert, if not the alert is delivered by the D-ACO. PCHH care coordinators convene the ICT, including the hospital or inpatient setting care coordinator, to review clinical needs and identify ways to stabilize and coordinate care for the beneficiary upon discharge.

Beneficiaries are supported by both the care coordinator and care manager to navigate the benefits and services that are accessible to them. The following workflow provides a sample process describing the interactions and hand-offs between the D-ACO, PCHH, specialists, and the beneficiary. Care coordinators are meant to serve as the vehicle to achieve decentralization of care coordination – triangulating the beneficiary, care managers and care coordinators at the care delivery or practice level, and the beneficiary's designated primary provider.



The D-ACO model assumes that transformation of care for dual eligible beneficiaries and improvements in the quality of care will occur thanks to an interdisciplinary care team approach, network cross-training, centralized member records, unified assessments and care plans, and a community-driven care model. These elements are detailed below.

#### d. Network Cross-Training

PCHHs and specialists will be expected to participate in cross-training programs run by D-ACOs. D-ACOs will address the topics such as the following:

- Behavioral health co-morbidities and tools to discern behavioral health needs
- Understanding connections between LTSS and other forms of care

- Identifying and connecting beneficiaries to community resources and social supports
- Review of assessments and instruments
- Role of the care plan and how it will serve as the guiding document in managing a beneficiary throughout their health care and social services continuum
- Metrics and outcomes
- Care coordination functions and responsibilities
- Using data from and reporting to CRISP
- Ways to use data analysis conducted by the D-ACO

D-ACOs will be responsible for communicating regularly to their providers to reinforce these concepts, such as by issuing a provider training manual and running periodic webinars.

**e. Centralized Member Record**

Given the various interactions each beneficiary may encounter, across payers and across settings, a critical aim of the D-ACO initiative is access to complete information about each beneficiary, ideally through a centralized member record. Beneficiaries may seek care at hospitals, physician offices or behavioral care clinics inside or outside a D-ACO's network. These providers may have linked electronic health records, but such linkages are not yet universal.

The D-ACO model will leverage existing CRISP infrastructure to offer the real-time notifications and alerts. The D-ACO model is based on the availability of an integrated technology system that will allow physicians, behavioral health specialists, LTSS providers, hospitals, and D-ACOs to deliver evidence-based care that is coordinated and personalized.

The goal is to ultimately provide meaningful information in the hands of the PCHH and the ICT to shape and positively impact the care of the beneficiary. The centralized member record element aims to embody the concept of the Patient-Centered Health Home concept by delivering the right information to the health home provider and various specialists and social support providers.

To address the lack of connectivity between settings and across payers, data infrastructure elements will address the following:

- Data exchange capabilities where all key providers can be notified in real time of critical events or concerns and all members of an ICT have access to the same information about the beneficiary
- Data analytics to assess whether beneficiaries are getting the right type of care at the right time and to predict future health concerns

- Data platforms that focus on retrospective insight as well as on measuring and analyzing the performance of direct interventions, utilizing predictive analytics, and housing, maintaining, and continually assessing care plans.

**f. Community-Driven Care Model**

Social factors play a key role in the effectiveness of health care and in the individual's ability to maintain health. The D-ACO model may address social needs including family and personal connections, transportation, housing, nutrition and employment options to achieve positive health outcomes. D-ACOs will be responsible for engaging with community resources in meaningful ways, to help meet beneficiaries' health-related needs.

**g. Consumer Protections**

As with any new approach to the provision of care, it will be vital to ensure that program participants are aware of the change, how it may affect their care and how they may seek support in the case of any issues or concerns after the model is implemented. D-ACOs will prioritize the inclusion of methods for consumer protections in the D-ACO model.

In addition to the extensive beneficiary counseling process described below, which is designed to maximize beneficiary choice and protect existing provider relationships, DHMH will develop a transition plan, focused on consumer education and outreach, to support D-ACO implementation.

The D-ACO model will also leverage existing processes available to beneficiaries, such as ombudsman programs, that are charged with giving a voice to consumers in addressing complaints or possible violations of rights. DHMH will also take into account the developments and recommendations of the newly-convened Consumer Standing Advisory Committee, which will consider consumer protections in light of new policies and initiatives.

**V. D-ACO Contracts**

A would-be D-ACO will need to submit an application that describes how the entity will operate and meet all the requirements detailed by DHMH (briefly listed above). D-ACOs must receive approval from DHMH for D-ACO designation. On a day-to-day basis, D-ACOs will look to DHMH for oversight, and CMS will empower DHMH with requisite delegation.

Established MSSP ACOs will be allowed to leverage their existing Medicare relationships and become D-ACOs through a streamlined process. Existing MSSP ACOs will need to augment capabilities, such as by adding LTSS providers to networks and by proving their ability to coordinate care across all Medicare and Medicaid covered services plus supportive social services. In addition, the beneficiary designation process and shared savings process for the two programs have numerous differences.

So, while MSSP ACOs will not be grandfathered into D-ACO status, they will have a streamlined pathway to selection based on their pre-existing governance structure and experience delivering care coordination services, reporting quality measures, and distributing savings. An MSSP ACO's participation as a D-ACO does not alter the MSSP model and the Medicare-only individuals it serves.

The D-ACO applicant will be required to show a number of participating providers sufficient to serve at least 2,500 beneficiaries. In addition, the D-ACO must demonstrate adequate participation from the full continuum of Medicare and Medicaid providers, including behavioral health and long-term care. The application will also require the submission of participation model contracts and a detailed shared savings/loss distribution methodology.

## **VI. Beneficiary Designation to PCHHs and D-ACOs**

### **a. Overview**

As with ACOs participating in the MSSP, a key element of the D-ACO program is the designation of Medicare-Medicaid beneficiaries to D-ACOs. The D-ACO program will employ a unique and innovative method of beneficiary designation that incorporates elements of the MSSP attribution process as well as the beneficiary counseling and support functions employed for the Medicaid MCO enrollment.

The D-ACO designation will serve as the basis of many key operational elements, including the initiation of care planning and care coordination, the calculation of financial and quality benchmarks, and the assessment of D-ACO quality and financial performance. However, unlike the attribution methodology used for MSSP ACOs, D-ACO designation will occur through a step-wise method that gives Medicare-Medicaid dual eligible beneficiaries affirmative choice in the selection of their D-ACO and PCHH. The proactive designation will allow for those D-ACO functions to take hold instantly, as opposed to some waiting for retroactive attribution.

The D-ACO designation process will entail outreach to the beneficiary before the effective date. There will be education and counseling to help beneficiaries make an affirmative choice about which PCHH and D-ACO to choose. These innovations will ensure that dual-eligible beneficiaries participating in the D-ACO program will be active participants in their own care planning and care management.

### **b. Beneficiary-targeted Materials**

D-ACOs and PCHHs will be prohibited from performing any marketing or educational activity to prospective D-ACO participants. D-ACOs and PCHHs will be required to distribute program education materials to current participants. DHMH will promulgate policies for materials that D-

ACOs and PCHHs may produce. All materials will be required to be submitted to DHMH or a designee for review and approval.

The educational materials will describe the location, hours, services, network, and other attributes of the program and will afford an opportunity for each D-ACO to highlight its unique approach. DHMH will approve these materials for use by the D-ACO and PCHH for current designees and DHMH will also use the same materials in the beneficiary outreach and counseling process.

**c. Beneficiary outreach, counseling, and PCHH/D-ACO election**

No later than 60 days prior to the beneficiary's effective date of proactive designation, DHMH or a designee will perform multiple initial outreach efforts by mail and/or telephone to prospective designees to notify them of their eligibility for the D-ACO program and the need to choose a D-ACO and PCHH. The beneficiary communication will emphasize the benefits of the D-ACO, including a summary of the additional care management services available while maintaining complete freedom of choice in existing Medicare and Medicaid providers.

The beneficiary counseling will start with the selection of a PCHH and will involve the discussion of the beneficiary's options based on his or her primary providers based on the results of a preliminary analysis of the proactive designation algorithm. This will allow the counseling team to provide PCHH and D-ACO options to the beneficiary based on his or her historical Medicare and Medicaid claims data, diagnostic history, and geographic location. If the beneficiary selects a PCHH that is exclusive to one D-ACO, the counseling is complete, but if the PCHH the beneficiary selects participates in two or more D-ACO's, the counseling continues to facilitate the selection of a D-ACO. DHMH or a designee will rely upon the educational materials provided by each D-ACO and PCHH following review and approval by DHMH.

Beneficiaries will be limited to their region. That means individuals in the northern region (Baltimore City and Baltimore County) will be precluded from electing a D-ACO that operates only in the southern region (Prince George's County and Montgomery County) and vice versa.

The beneficiary counseling will be culturally, linguistically, and disability competent and will build upon the experience and expertise of the local departments of social services to ensure that as many beneficiaries as possible are designated to a PCHH and D-ACO by election.

**d. Proactive Designation Methodology**

If a Medicare-Medicaid dual eligible beneficiary has not made an election of a PCHH and D-ACO, DHMH will employ a proactive designation methodology to designate the beneficiary to a D-ACO. The beneficiary will be notified of the designation no later than 30 days prior to the effective date of the designation. The D-ACO and PCHH will be allowed to initiate beneficiary

education and outreach efforts to initiate the care planning and care management process following the effective date of the designation.

The proactive designation methodology will follow a step-wise logic and will seek to reduce disruption to the beneficiary, build upon existing provider and care management relationships, and ensure the development of a successful relationship between the beneficiary and PCHH and D-ACO.

First, DHMH or a designee will determine whether the beneficiary is already attributed to an MSSP ACO. If so, DHMH will determine whether the MSSP ACO is also a D-ACO. If that is the case, the beneficiary will be designated to the same D-ACO where he or she has been attributed for the MSSP. If the beneficiary has not been attributed to an MSSP ACO, or the MSSP ACO is not a participating D-ACO, the beneficiary will then be attributed to a PCHH and D-ACO based on his or her utilization history. The designation will look at geo-location, services delivered at potential PCHHs, services delivered by providers within potential D-ACO networks, and the population/service focus of the D-ACO, if any. The designation will take into consideration diagnoses to ensure that beneficiaries with disabilities and special needs are designated to the PCHH best equipped to serve him or her. In addition, the designation will take into consideration the beneficiary's primary language and the linguistic competencies of the PCHH.

In the event that two or more D-ACOs are equally appropriate for a particular beneficiary, the beneficiary will be assigned to the D-ACO with the highest overall quality performance score (for the initial designation, which will occur prior to the calculation of any D-ACO quality scores, a D-ACO's benchmark quality score will be used). It is DHMH's intention to minimize the need to use the proactive designation methodology through the beneficiary outreach and counseling process described above.

#### **e. Changes in D-ACO and PCHH Designation**

Beneficiaries will have 30 days following the effective date of any designation – by election or by proactive designation – to make a change to a different D-ACO and/or PCHH within his or her region. After the 30-day period, a beneficiary will be able to change to a different D-ACO and/or PCHH on an annual basis or conditions warrant, such as a move to a different region.

### **VII. Paying for Value**

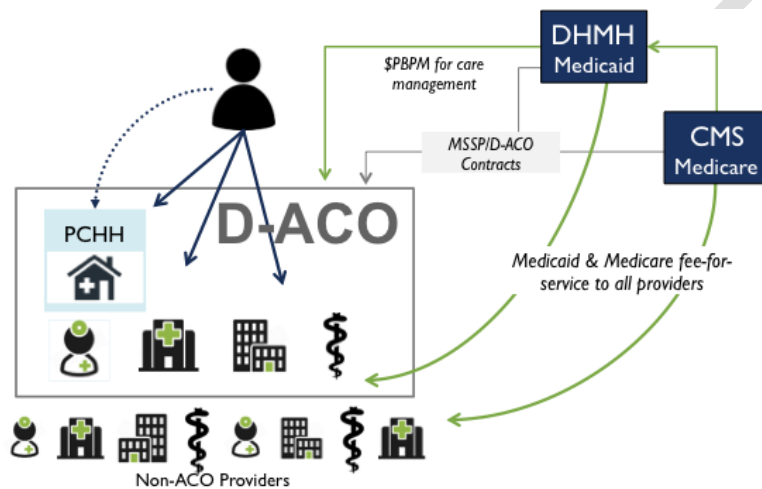
The D-ACO model will include an innovative array of financing devices to alter the incentive structure in the Medicaid and Medicare fee-for-service system in Maryland to pay for value. The D-ACO model will include a shared savings and shared loss approach that is comparable to the one employed by the MSSP ACO program, Track 2.

The D-ACO model will also include a monthly care management fee. All providers will continue to receive regular Medicare and Medicaid fee-for-service payments for all services except for



the Medicare chronic care management (CCM) fee, which will be turned off for beneficiaries designated to a D-ACO, and invested in the D-ACO care management fee.

This combination of financing for up-front care management plus access to the long-term incentive of shared savings is a unique innovation to this model. Moreover, starting in Year 3, D-ACOs will also face some risk of loss in the event that their aligned beneficiaries' total cost of care exceeds targets, though, as described below; that risk will be buffered against the consequences of so-called catastrophic cost outcomes that are beyond the control of those on the front lines.



#### a. Compensation for Care Coordination

D-ACOs will receive a care management fee per beneficiary per month (PBPM) from DHMH to apply toward costs of care coordination and case management. This up-front fee is intended to ensure the availability of intensive care management and coordination services without regard to the timing or amount of shared savings. D-ACOs will be expected to show how the funding will be applied to care coordination and care management; they will not be allowed to divert the funding to other uses.

D-ACOs will be expected to flow a portion of the care coordination payment down to participating PCHHs, but the determination of how much of the fee is distributed to any one PCHH will be left up to the D-ACO's discretion, based on the level of care coordination functions the PCHH is equipped to handle. This will allow the D-ACO the flexibility to partner with a network of PCHH entities having a broader range of financial resources and in-house care management capacity.

The PBPM payment will be tiered based on beneficiary risk stratification (driven by physical, behavioral, LTSS and social needs) as indicated by historical utilization data for population cohorts, not individuals. The payment to individual organizations may be adjusted where they are already receiving care coordination payments from different programs.

DHMH estimates that the PBPM will equal no more than 2 percent of the TCOC. Applying this percentage to the CY 2012 cost base, the average across all Medicare-Medicaid dual eligible beneficiaries would be approximately \$64 PBPM. Amounts in individual risk tiers may be proportional to the per capita health costs per tier, but it is conceivable the amounts would be weighted differently to take account of other pertinent factors such as the availability of other resources to support care coordination for some groups of beneficiaries.

The payment of the PBPM fee will begin the first month following the D-ACO's successful submission of an encounter file to DHMH documenting the completion of an initial care plan. The PBPM will continue flowing for as long as the beneficiary is designated to the D-ACO and the care plan continues to be managed and updated according to the care management policy requirements. No additional monthly encounter submissions will be necessary.

In addition, there will be a one-time payment of an enhanced fee for the completion of the initial care plan to compensate for higher outreach, engagement, assessment, and care planning costs. This initial care planning payment will be equal to 2 or 3 months' worth of ongoing PBPM payment (it will also vary by risk tier) and will be made upon the submission of a successful encounter to DHMH for the complete initial care plan.

Care coordination funds will be sourced from CMS, as allocated out of anticipated health cost savings from the model. Additionally, CMS would move its normally-claimable Medicare CCM fees for designated Medicare-Medicaid dual eligible beneficiaries to this care coordination fund.<sup>5</sup>

This innovative care management fee will enable D-ACOs to perform outreach, engagement, and care planning to adequately onboard dual-eligible beneficiaries into an effective care management program. In contrast to MSSP, D-ACOs will not have to rely entirely on the hope of shared savings, which, even if realized, will occur more than 18 months after the initiation of care management.

#### **b. Rewards and Risks to Promote Value in D-ACOs**

D-ACOs will also be subject to a reward and risk model having some similarities to the MSSP ACO program. This reward/risk overlay to the care management fee mechanism will ensure that D-ACOs have a strong incentive to make the care management process work effectively.

As noted, all provider payment for care will consist of regular Medicare/Medicaid fee-for-service. A total cost of care target will be established for each D-ACO's designated beneficiary population for the purpose of calculating savings or losses. This target will encompass all Medicaid spending as well as all Medicare parts A and B spending for affected beneficiaries.

---

<sup>5</sup> Chronic Care Management: "At least 20 minutes of clinical staff time directed by a physician or other qualified health care professional, per calendar month." CMS code 99490 – paid at \$42/month.

Outpatient prescription drug expenditures under Medicare Part D will be excluded from the TCOC calculation and the calculation of any shared savings or losses because they are subject to a capitated rate setting process that sits outside the fee-for-service system. Nevertheless, D-ACOs are still required to incorporate outpatient prescription drug therapies in the care planning and care coordination process including medication adherence and reconciliation.

### 1. Cost of Care Targets

Upon a beneficiary's designation to a D-ACO, DHMH will credit a total cost of care projection per beneficiary per month to a pool associated with that entity. At end of the performance year, the actual TCOC will be calculated and compared to the TCOC target.

The TCOC target is expected to be a blended PBPM amount for each D-ACO, which will need to consider adjustments for the following:

- i. **Population Mix:** Subsets of the dual eligible beneficiary population, with unique differences in risk, include: (a) Long Term Nursing Facility Residents, (b) HCBS Recipients – sub-segmented by highest need and over and under age 65, (c) Community Dwelling, and (d) Individuals with Certain Mental Health Diagnoses. Given the wide variation of risk for each of these subpopulations, the proportion of each subpopulation that makes up the total D-ACO enrolled population will need to be considered when creating the specific D-ACO blended benchmark. Given that the identification of these particular subgroups requires a retrospective claims-level analysis, the actual subgroups will not be known at the beginning of the year; as a result, some level of historical mix of these subpopulations, in addition to emerging experience that reflects the actual enrollment mix of a particular D-ACO, will be implemented to make this adjustment.
- ii. **Risk Adjustment:** DHMH does not at this time intend to risk adjust on an individual beneficiary level, such as is done with capitation rates for Medicare Advantage plans. Instead, each beneficiary will be identified with a cohort, as indicated above. However, through the development period, DHMH will investigate the feasibility of a functional ability risk adjuster that would reflect not strictly health status but rather the individual's capacity to engage in health-related behaviors. Such functional ability scores may consider beneficiary capacity to perform commonly recognized activities of daily living and may also consider social factors such as homelessness. Two mechanisms that are already in place in Maryland that could be considered in the model, are the RUGS and interRAI tools, which are used to evaluate nursing facility and HCBS resource needs, respectively. These are mechanisms that may be used to adjust the TCOC benchmark to reflect the level of resource need for LTSS services.

- iii. **Reimbursement Differences:** Differences in reimbursement for key services will be factored into the blended benchmark, particularly for Nursing Facility and Inpatient Hospital services. As the underlying reimbursement level for these providers may vary significantly between providers in one D-ACO or another, adjustments will be necessary to account for variation that is not due to care management, but instead due to provider contracting differences.

## **2. Rewards and Risks**

Initially, D-ACOs will have the opportunity to earn rewards for producing both savings and meeting quality targets, but they will not be at risk for net deficits. Beginning in Year 3, downside risk will be added; however, at all times, the D-ACO reward/risk formula will be skewed more toward incentive bonus than to penalty. A tiered savings/loss methodology will be used to determine how the resulting savings or losses would be distributed between the State and D-ACOs. These tiers will be set up such that the D-ACO will assume increasing responsibility with greater savings or losses, subject to the shareable losses/savings cap.

A D-ACO will be deemed eligible for an award if the savings and quality thresholds are reached. Failure to reach the minimum quality score or an expenditure deficit will result in a reduced award or the loss of the award. The figure below presents a conceptual illustration of the reward/risk formula.

A D-ACO will be obligated to distribute a meaningful portion of any award, or loss share, to participating providers – of all types – that contributed to the result. This would allow Medicare providers to potentially benefit from Medicaid savings and vice versa under the theory that providers in one program may have an impact on the outcome of health for the other.

A D-ACO may retain some of any award to offset operational expenses not otherwise covered by the retained care coordination fee, to build a reserve to cover future loss shares owed, or for other purposes of its choosing.

Each D-ACO's shared savings distribution methodology will be subject to DHMH prior approval, must be included in the participation agreements between participating providers and the D-ACO, and must include provisions conditioning the distribution of savings based on the quality and level of per-patient contributions to the overall D-ACO performance. Precise formulas are still to be determined, with a key objective being to make sure that PCHHs will qualify as advanced alternative payment models under MACRA's Quality Payment Program.

		Losses (Yr. 3 & After)			Savings		
Actual Spend vs. Target:		> 5%	2 - 5%	0 - 2%	0 - 2%	2 - 5%	> 5%
D-ACO Quality Rating	Highest	20%	10%	0%	40%	50%	60%
	High	30%	20%	10%	30%	40%	50%
	Acceptable	40%	30%	20%	20%	30%	40%
	Less Than Acceptable	50%	40%	30%	0%	0%	0%

In years 1-2, a D-ACO has no downside risk; its share of any loss = 0%

Quality rating must be at least Acceptable for D-ACO to earn any savings award

To protect D-ACOs against the possibility that individual high-cost cases will lead to aggregate losses or deplete otherwise deserved savings, the model will include a specific stop-loss feature. The most costly cases will be removed from performance calculations, as well as from the computation of the baseline TCOC target. The resulting dollar threshold, as derived from the predetermined percentile, may be separately calculated for different subpopulations, to account for differences in spend for certain services, such as LTSS.

In addition, once D-ACO downside risk begins in Year 3, there will be an aggregate stop-loss protection feature. Any D-ACO owing back money in the form of a loss share will not have to pay an amount more than 5 percent of the TCOC target. For balance, the same 5 percent limit will apply to savings awards payable to D-ACOs.

### VIII. Quality Measurement

As noted above, quality will be an important factor in the incentive formula. Rewards paid out for generating savings will increase to the extent that quality performance also rises. Based on technical reporting requirements that DHMH will develop with input from CMS and stakeholders, DHMH will calculate quarterly and annual performance reports involving submissions of data from D-ACOs when necessary.

Furthermore, DHMH will regularly analyze process and outcome measures to assess for programmatic improvements and areas of deficiency, and to ensure the incentives do not inadvertently promote unintended results: reduced health outcomes or poor beneficiary

experience. D-ACOs will be required to conduct similar analyses of metrics related to quality of care, process, and outcome reporting for their PCHHs. Finally, the quality measures used for the shared savings calculation will also be used by the independent evaluator to assess the effectiveness of the model.

#### **a. Quality Measure Selection Framework**

DHMH has identified an introductory quality measure set for the D-ACO program based on clearly-defined goals.<sup>6</sup> DHMH sought to ensure that beneficiaries are protected from harm, that cost savings are associated with improved quality of care and quality of life, and to create alignment of measures across elements of the All-Payer Model and other payment initiatives including the MACRA Quality Payment Program.

DHMH also sought to ensure coverage of key domains of care for Medicare-Medicaid dual eligible beneficiaries, to utilize measures that assess quality of life, to rely upon validated measures from credible stewards, to focus any process measures on care coordination, and to minimize the total measures to reduce reporting burden. Building from this base, DHMH has the flexibility to expand and include disease specific metrics and duals' population cohort metrics.

The introductory set does not feature metrics focused on LTSS and community integration, though the DHMH will incorporate those metrics into the measure set as the D-ACO program is designed further. Other measures that may arise as the All-Payer Model progresses can be incorporated as well.

Finally, for consistency with MACRA provisions, DHMH is considering establishing some of the measures as improvement measures where appropriate and requiring continuous quality improvement.

#### **b. Measure Performance Assessment Methodology**

The quality measure performance assessment methodology for the D-ACO program builds upon the approach used in the MSSP ACO model and seeks to both recognize a greater continuum of quality and create incentives for ongoing quality improvement. In particular, as indicated in the shared savings/losses table above, D-ACO quality performance will be calculated and scored into: "less than acceptable," "acceptable," "high," and "highest."

Each D-ACO will have its performance on each measure rated based on either a clustering approach or a relative distribution and significance approach depending on the type of measure in a manner roughly akin to the Star Ratings cut points system for Medicare Advantage. This will ensure that what constitutes "less than acceptable," "acceptable," "high," or "highest" for a

---

<sup>6</sup> See the Appendix for the list of core quality measures proposed for the D-ACO program.

given measure is very similar for each D-ACO. Summary ratings for each D-ACO will then be calculated by using a weighted average of the measure-level ratings.

DHMH will determine the weighting of each measure in partnership with CMS once the final measure set has been established but the final weighting methodology will prioritize improvement and outcome measures over process measures. The final D-ACO summary rating will then be used to determine the D-ACO's eligibility to receive a level of shared savings/losses as described above.

## **IX. Demonstration and Program Authority**

### **a. Demonstration Authority**

Under the authority at Section 1115A of the Social Security Act ("Act"), the Center for Medicare and Medicaid Innovation is authorized to "...test payment and service delivery models ...to determine the effect of applying such models under [Medicare and Medicaid]." Such models include but are not limited to the models described in section 1115A(b)(2)(B) of the Act including the D-ACO program. Section 1115A(d)(1) authorizes the Secretary to waive such requirements of titles XI and XVIII of the Act and of Sections 1902(a)(1), 1902(a)(13), and 1903(m)(2)(A)(iii) of the Act as may be necessary solely for purposes of testing models described in section 1115A(b).

### **b. Medicare Authority**

The Medicare portions of the D-ACO program will operate according to existing Medicare law, regulation, and sub-regulatory guidance, and will be subject to existing requirements for financial and program integrity, except to the extent these requirements are waived or modified. Such waivers are likely to include the same fraud and abuse waivers created to support the MSSP ACO program, including: the Pre-Participation Waiver, Participation Waiver, Shared Savings Waiver, Compliance with Stark Law Waiver, and the Patient Incentive Waiver. For D-ACO participants to successfully and confidently engage in care management, without fear of fraud and abuse liability, they may need some protection from the fraud and abuse laws that would constrain their activities in the fee-for-service system. The Pre-Participation Waiver will allow D-ACO participants to fund development for the benefit of the participating providers without the risk of liability under certain federal fraud and abuse laws, including Stark Law, anti-kickback statutes, gainsharing, and beneficiary inducement civil monetary penalties.

The Participation Waiver can allow a D-ACO participant to undertake certain actions for the D-ACO during operations itself that might otherwise implicate the federal fraud and abuse laws. The Shared Savings Waiver will be crucial to allow for shared savings received by the D-ACO to be applied in compliance with the distribution methodology policies DHMH will promulgate. The Compliance with Stark Law Waiver will protect arrangements meeting a Stark Law exception from liability under the anti-kickback laws or gainsharing civil monetary penalties.

Finally, the Patient Incentive Waiver allows a D-ACO to offer to its designated beneficiaries certain non-monetary preventive items or services which may be included in the plan of care. Additional waivers may be necessary to provide for alterations to the CCM fee claiming for D-ACO designees and for the sharing of Medicare savings/losses to D-ACOs. Following further refinement of the D-ACO program design, DHMH will engage with CMMI, Center for Medicare, and CMS Office of General Counsel (OGC) on any other necessary Medicare waivers.

### **c. Medicaid Authority**

The Medicaid elements of the D-ACO program will operate according to existing federal and state Medicaid law and regulation, sub-regulatory guidance, and existing requirements for financial and program integrity, except to the extent these requirements are waived specifically for this program. Maryland will submit State Plan Amendments (SPAs) or waivers for Medicaid services and implementation of the D-ACO program as necessary following discussion with CMS. Approval of D-ACO participation agreements will be contingent upon CMS approval of any necessary SPAs or waivers. Waiver authority will likely be necessary to enable the additional care management services, to allow them to be made available on a regional basis rather than statewide, and to provide for the sharing of Medicaid savings/losses.

## **X. Coordination with Other Models**

To the extent that D-ACOs envisioned to serve the Medicare-Medicaid dual eligible population can perform duties on behalf of other populations under other agreements, they will be free to do so. For instance, DHMH envisions that many of the D-ACO entities will already be entities participating in the MSSP ACO program. PCHHs inside D-ACOs likely will also perform similar functions for non-dual-eligibles under other programs. Role definitions and terms of trade will be specified jointly and will be made consistent wherever feasible. The assignment of care coordination responsibilities will be unified so that, as much as possible, each individual will have a single care coordinator acting on her/his behalf across all settings of care at all times.

Where established rules call for setting-specific care coordinators that cannot legally be eliminated, the central care coordinator will work to ensure the beneficiary experiences neither conflicting support nor gaps in support.

### **a. All-Payer Model**

DHMH and the Maryland Health Services Cost Review Commission (HSCRC) have collaborated throughout the planning of this D-ACO program to ensure that this initiative and any new features of the All-Payer Model that emerge in 2019 will operate in complementary and harmonious fashion, without duplication or conflict.

Functionally, for Medicare-Medicaid dual-eligible beneficiaries designated to a D-ACO, the D-ACO will have primary responsibility for care management. Any providers or entities, such as hospitals participating in the HSCRC Complex and Chronic Care Improvement Project (CCIP) or



Hospital Care Improvement Project (HCIP) tasked with providing post-acute care transitions or other care coordination services will complement the D-ACO and PCHH care coordination and care-management teams.

Financially, the D-ACO model will complement and leverage the global budget revenue (GBR) arrangement that governs how Maryland hospitals are paid. It will widen the group of actors that are motivated to reduce utilization. Moreover, the model will inspire participants to contain usage of the full array of Medicaid- and Medicare-covered services.

The D-ACO program will be treated as a virtual payer. Medicaid and Medicare will both continue to pay claims using the established all-payer rates. However, from an accounting standpoint, the D-ACO program ledger would be credited with an income stream equal to the TCOC projection for the whole population. That same ledger would be debited with claims costs as incurred. At the end of each year there would be a tally of the collective income and outlays of all D-ACOs to determine if there are savings or losses. That will be followed by a reconciliation process, with awards of savings shares to those D-ACOs that generated savings and collection of any loss shares owed by those that produced overruns, as described earlier.

#### **b. Maryland Comprehensive Primary Care Model**

As noted at the beginning of this paper, the DHMH is working with CMMI to design the Maryland Comprehensive Primary Care Model, a statewide primary care transformation vision. The aim is to create advanced Person Centered Homes that are intended to serve Medicare beneficiaries – including dual eligibles – and others residing outside the D-ACO regions. Within the D-ACO regions, many of these primary care homes could participate in D-ACOs as PCHHs.

### **XI. State Share of Federal Savings**

DHMH expects to negotiate a savings arrangement with CMS whereby the State of Maryland will be eligible to receive one-half of remaining federal government savings on both Medicaid and Medicare spending for Medicare-Medicaid dual-eligible beneficiaries served by D-ACOs.

Savings calculations would be made using the TCOC targets and factoring in both claims/benefits expenditures and outlays made for care coordination functions. Savings available for sharing by the State would be net of any bonus payments made to D-ACOs pursuant to their incentive formulas.

**APPENDIX: CORE QUALITY MEASURES FOR DUAL ELIGIBLES ACO**

<b>Measures</b>	<b>Data Source</b>	<b>Focus</b>	<b>NQF #/Measure Steward</b>
Initiation and Engagement of Alcohol and Other Drug Dependence Treatment	Claims/ E H R	B, M	4/NCQA
CAHPS Health Plan v 4.0 - Adult questionnaire	Beneficiary Reports	M	6/AHRQ
Controlling High Blood Pressure	Under Reconsideration NQF	O, C, M	18/NCQA
Preventive Care and Screening: Tobacco Use: Screening & Cessation Intervention	Claims/E H R /Paper or Registry	C, S, M	28/AMA Consortium
Medication Reconciliation - Post Discharge	Claims/E H R /Paper or Registry	C, S, M	97/NCQA
Falls: Screening, risk-Assessment, and Plan of Care to Prevent Future Falls	Claims/E H R /Paper	M	101/NCQA, AMA Consortium
3-Item Care Transition Measure at Hospital Discharge (Needs, responsibility and medications)	Beneficiary Reported Data	S	228/University of Colorado
Advanced Care Plan	Claims/E H R	S, M	326/NCQA, AMA Consortium
Preventive Care and Screening: Screening for Clinical Depression and Follow-Up Plan	Claims/Paper/Other	B, M	418/CMS, Mathematica, Quality Institute of PA
Documentation of Current Medications in Medical Record	Claims/Other/Registry	S, M	419/CMS, Mathematica, Quality Institute of PA (QIPA)
Adult Weight Screening and Follow-up	Claims/Other/Paper/Registry	C, M	421/CMS, Mathematica, QIPA
Follow-Up After Hospitalization for Mental Illness	Claims/E H R	B, M	576/NCQA
Timely Transmission of Transition record (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care)	Claims/Other/Paper	\$	648/AMA Consortium
Plan All-Cause Readmissions	Claims	\$	1768/NCQA
Antipsychotic use in persons with dementia (New Measure)	Claims	B	2111/Pharmacy Quality Alliance
Sepsis - Appropriate treatment of MSSA (Methicillin-sensitive Staphylococcus aureus) Bacteremia (Note sepsis measures are undergoing revision.	Claims/E H R	M	CMS 407/Infectious Disease Society of America

Legend: B= Behavioral; O = Outcomes; C = Consensus Core Set; S = Shared Savings Program; \$ = Efficiency Coordination Opportunity; M = MACRA – For a list of MACRA Quality measures see Federal Register, Volume 81, No 89, May 9, 2016; pages 28399 – 28586.

## **Appendix B**

# **Implementation Plan for Connecting Skilled Nursing Facilities to Health Information Exchange**

# **Implementation Plan for Connecting Skilled Nursing Facilities to Health Information Exchange**



## **CRISP**

**Chesapeake Regional Information  
System for our Patients**

---

*Connecting Providers with Technology  
to Improve Patient Care*





## Table of Contents

<b>Introduction .....</b>	<b>3</b>
Purpose of Project.....	3
<b>Background .....</b>	<b>3</b>
Current CRISP Services.....	3
Deployment of New CRISP Infrastructure .....	4
Current State of Skilled Nursing Facility Connectivity .....	5
<b>Implementation Plan to Connect SNFs .....</b>	<b>7</b>
<b>Next Steps .....</b>	<b>10</b>
<b>Appendix A: Summary of Hospital and Skilled Nursing Facility Data and Reporting Needs .....</b>	<b>11</b>
<b>Appendix B: Long-Term Care Facilities Connected to CRISP as of June 2016 .....</b>	<b>15</b>
<b>Appendix C: Methods.....</b>	<b>20</b>
<b>Appendix D: MDS Data Elements for Treatment Use Cases.....</b>	<b>21</b>



## Introduction

In recent years Maryland has embarked on a significant and innovative effort to improve care and reduce growth in health care spending. In this effort Maryland has partnered with the Centers for Medicare and Medicaid Services (CMS) to transform the states' existing all-payer hospital payment system that has been in place for over forty years. Maryland received approval of the new All-Payer Model and began implementation at the start of 2014.

Improving care coordination is an important component of Maryland's strategy to meet the goals of the Model. To support this work, Chesapeake Regional Information System for our Patients (CRISP) has embarked on an expansion of its existing hospital-focused services to cover the cooperative IT and data needs of stakeholders and an expansion of the sources supplying data to CRISP including skilled nursing facilities and ambulatory practices.

### *Purpose of Project*

Stakeholders have identified increasing skilled nursing facilities (SNF) participation in CRISP as an area of particular importance and interest to enable improved care coordination between hospitals and SNFs. Based on this feedback and as part of Maryland's Round Two State Innovation Model Design grant from CMS, CRISP worked with stakeholders over the past four months to develop a strategy to connect all 230 SNFs in Maryland to CRISP. In addition to developing a strategy to connect SNFs, we also engaged hospitals and SNFs to determine what data and reporting capabilities that are not currently available in CRISP would be valuable to add to support improving care coordination between these settings.

In parallel with this planning work—and funded through other sources—CRISP has been actively working to increase the number of connected skilled nursing facilities. As of June 2016, 64 of the 230 skilled nursing facilities in Maryland are connected to CRISP and sharing at least encounter data.<sup>1,2</sup> See [Appendix B](#) for the list of connected facilities.<sup>3</sup>

## Background

### *Current CRISP Services*

CRISP started eight years ago with a focus on enabling providers to access patient data at the point-of-care to support treatment use cases. The Clinical Query Portal, CRISP's initial services offering, provides access to lab results, radiology reports, electronic reports, discharge summaries, and other patient-specific clinically-relevant data. Over time the information available in the Clinical Query Portal has expanded to include encounter information and medications from the Prescription Drug Monitoring Programs (PDMP) in Maryland and other neighboring states. CRISP's service offerings have also expanded to include encounter notifications, the Payer Portal, and reporting analytics services. With the addition of these services CRISP has also moved from enabling point-of-care access only for treatment purposes to supporting a wider set of uses

---

<sup>1</sup> Total number of SNFs is based on Maryland Department of Health and Mental Hygiene. Licensee Directory: Comprehensive Care Facilities and Extended Care Facilities. Accessed June 30, 2016  
<http://dhmh.maryland.gov/ohcq/SitePages/Licensee%20Directory.aspx>

<sup>2</sup> Encounter data covers when a patient is admitted, discharged, or transferred. Encounter data often is received through from HL7 Admission, Discharge, and Transfer (ADT) Messages.

<sup>3</sup> The most current list of health care providers connected to CRISP is available [here](#).



including care coordination and quality improvement. CRISP has also expanded the allowed users from providers only to include, for certain services and under set rules, care coordinators and payer staff.

Today, CRISP has 232 active clinical data feed connections from healthcare organizations in Maryland and Washington D.C. CRISP is connected to hospitals, long-term facilities, ambulatory providers, radiology facilities, laboratories, and emergency medical facilities. All of the acute care hospitals in Maryland and Washington D.C. are connected to CRISP. CRISP also exchanges encounter data with providers in Delaware (via the Delaware Health Information Network) and with Northern Virginia hospitals. More than 8,500 providers log approximately 125,000 queries for patient information per month from the Clinical Query Portal. Over 1.2 million encounter notifications are sent to subscribing providers per month.<sup>4</sup>

### ***Deployment of New CRISP Infrastructure***

The CRISP Integrated Care Network (ICN) Infrastructure project was launched in July 2015 and is the overarching set of shared IT infrastructure being developed statewide to support care management by providers and payers. The underlying assumption is that, in their efforts to achieve the three-part aim of health reform, Maryland stakeholders will need additional and enhanced tools and services beyond CRISP's core services. Pursuing some elements of the build-out cooperatively will result in more complete patient information being available to clinicians and care managers, since individual institutions using just their own data sources often have only a partial picture. A shared IT infrastructure with active exchange of patient data will result in better coordination for complex patients who use multiple different hospitals and health systems. Subsequently, better coordination will result in further cost savings, by avoiding duplication of effort.

Having been chartered to pursue health IT projects which are best done cooperatively, CRISP is well positioned to manage the build-out of shared infrastructure. By virtue of its governance model, the stakeholders who use CRISP services direct the organization, providing oversight and accountability, and this design has been extended to the new infrastructure project. The new tools are being built on top of the existing HIE platform, which CRISP already operates.

The CRISP ICN Infrastructure project aims to connect providers in multiple settings—from hospitals and physician practices to long-term care facilities—with the proper information to improve health outcomes and reduce costs by providing tools, data, and services to support care coordination. The ICN is a multi-year initiative that includes seven primary workstreams that together build on the existing CRISP data and service offerings to enhance clinical care and care coordination—especially when patients receive services from multiple providers. CRISP is working in collaboration with and in support of the state-funded Regional Partnerships for Health System Transformation participants. The ICN workstreams are organized into seven major initiatives that include:

1. **Ambulatory Connectivity:** Connect more practices, long-term care facilities, and other health providers to the CRISP network.
2. **Data Router:** Build a data router that includes data normalization, patient consent management, patient-provider relationships – for sharing patient-level data.
3. **Clinical Portal Enhancements:** Enhance the existing Clinical Query Portal with a patient care overview; a provider directory; information on other known patient-provider relationships; and risk

---

<sup>4</sup> Data as of June 2016.



scores.

4. **Notification & Alerting:** Create new alerting tools to allow notifications to happen within the context of a provider's existing workflow.
5. **Reporting & Analytics:** Expand existing CRISP reporting services and make them available to a wider audience of providers and care managers.
6. **Basic Care Management Software:** Support care management efforts throughout the state and region—through data feeds, reports and potentially a shared care management platform.
7. **Practice Transformation:** Assist provider's efforts to improve care delivery by training them on leveraging CRISP data and service, sharing best practices, and supporting collaborative partnerships.

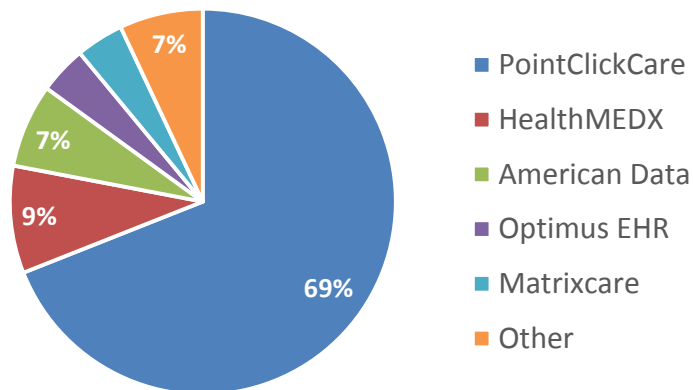
## **Current State of Skilled Nursing Facility Connectivity**

### *Maryland*

A 2014 survey by the Maryland Health Care Commission (MHCC) identified that SNFs in Maryland have significantly lower adoption rates of robust electronic health records (EHR) than providers who are eligible for the EHR Incentive Program.<sup>5</sup> Almost 72 percent of SNFs reported having adopted an EHR system, however less than half of them reported that they used all eight functions of a basic SNF EHR that MHCC identified.<sup>6</sup> Twenty-eight percent of SNFs in Maryland have not adopted an EHR. Approximately 48 percent of SNFs have not used all the functions of a basic EHR. Vital signs, laboratory data, and activities of daily living were the most commonly cited functionalities not being used by SNFs. The survey also identified that five SNF health IT developers account for approximately 93 percent of the EHR systems deployed in Maryland SNFs with one accounting for 69 percent of the market.

Figure 1: SNF Health IT Developer Market Share

(N=55)



<sup>5</sup> MHCC (2016). *Comprehensive Care Facilities Adoption of Electronic Health Records: An Information Brief*. Retrieved from: [http://mhcc.maryland.gov/mhcc/pages/hit/hit/documents/HIT\\_LTC\\_Scan\\_Brief\\_2014.pdf](http://mhcc.maryland.gov/mhcc/pages/hit/hit/documents/HIT_LTC_Scan_Brief_2014.pdf)

<sup>6</sup> The eight functions are: assessment (other than the Minimum Data Set); demographic information; activities of daily living; diagnostic related information; allergy list; vital signs; laboratory data; and discharge summaries.





As of June 2016, 64 of the 230 skilled nursing facilities in Maryland are providing data to CRISP. All of these facilities are sharing at least encounter information. Only five of the facilities are sharing additional clinical data with CRISP. Based on our experience to date, SNF health IT developers' ability to capture and export clinical data is significantly behind the capabilities of health IT developers serving the ambulatory and inpatient markets that have been driven by the EHR Incentive Program.<sup>7</sup>

As of June 2016, 74 long-term post-acute care (LTPAC) facilities have access to the Clinical Portal and 49 are live on ENS. In June 2016, LTPAC facilities logged 116 queries for patient information from the Clinical Portal. Over 3,466 encounter notifications were sent to subscribing LTPAC facilities in June.

**Table 1: LTPAC Facility Connectivity and Access to CRISP**

Total LTPAC facilities with live access to Clinical Portal as of June 2016	74
Number of Queries by LTPAC Facilities in June 2016	116
Total LTPAC Facilities live on ENS as of June 2016	49
Number of encounter notification received by LTPAC Facilities in June 2016	3,466
LTPAC Facilities Sending Encounter Data to CRISP	64
LTPAC Facilities Sending Other Clinical Data to CRISP	5

#### *Federal Policy*

A number of federal policy initiatives will be driving changes in the SNF environment in the coming years and are important considerations in designing a strategy for SNF connectivity. The IMPACT Act of 2014 requires CMS to develop standardized and interoperable patient assessment data elements that can be used in forms across long-term post-acute care settings. This effort will update the Minimum Data Set (MDS), the patient assessment form used by SNFs for all patients in a Medicare and/or Medicaid certified long-term care facility, with a set of standardized data elements. The implementation of this portion of the IMPACT Act is set to begin in October 2018. Increased standardization across the assessment forms should enable common use cases to be developed for leveraging the data from across long-term care settings.

In February of 2016, CMS expanded the permitted uses of federal 90 percent matching rate for state expenditures on activities to promote HIE to cover costs to support all Medicaid providers that Meaningful Use Eligible Professionals need to coordinate care with.<sup>8</sup> This expansion enables the use of Medicaid HITECH 90/10 funds to support HIE onboarding costs for long-term post-acute care providers (including SNFs), behavioral health providers, substance abuse treatment providers, and others who were previously not included due to the limitation that funds could only support providers eligible for the Medicaid EHR Incentive Program. To be able to support HIE onboarding for these providers, they must share patients with a Medicaid EHR Incentive Program Eligible Professional. As noted below, funding is a key barrier to SNFs participation in HIE; the ability to cover or help offset those costs will provide a significant boost to SNFs ability to participate in HIE.

---

<sup>7</sup> For instance, we have found when SNF health IT developers are able to produce a care summary record (i.e. a continuity of care document (CCD)) the included data fields are limited compared to ambulatory and inpatient health IT developers.

<sup>8</sup> CMS (2016) *State Medicaid Director #16-003*. Retrieved from: <https://www.medicaid.gov/federal-policy-guidance/downloads/SMD16003.pdf>



## Challenges

SNFs along with other LTPAC providers face financial barriers that create challenges to their adoption of EHRs and their participation in HIE. High staff turnover and the lack of IT skills and training are also challenges to SNFs, particularly smaller facilities, participation in HIE.<sup>9</sup>

As the functionality of EHRs serving SNFs improves, CRISP will be able to expand the amount of clinical data available from these providers. This expansion of functionality and standards will take time and the evolution will not be smooth or consistent across health IT developers. *No federal program has established a defined set of certification criteria for SNF EHRs as the EHR Incentive Program has done for ambulatory and inpatient settings.* The interoperability functionality available in SNF EHRs is often behind the abilities of EHRs serving the inpatient and ambulatory providers.

The drivers and incentives for SNFs to participate in CRISP vary based on the marketplace dynamics in different regions of the state. In regions with multiple hospitals and SNFs there are competitive drivers that increase SNFs' interest in participating in CRISP. Often hospitals in these regions are asking SNFs to sign up with CRISP. In regions with a single dominant hospital and SNF we often see situations where the SNF has access to the hospital's EHR, providing access to inpatient data for the majority of their patient, reducing the value of CRISP to the SNF.

SNFs find that patient data in CRISP is not always timely for their needs. For instance, discharge summaries are not available within CRISP until they are signed by the provider which may not occur before the patient is admitted to a SNF. As CRISP increases the amount of data available from ambulatory sources and begins to receive care summary documents, we anticipate SNFs will find additional value in the information available in CRISP.

Recognizing the significant variability in EHR adoption and use among SNFs, we have focused on developing a strategy that meets organizations where they are today. It has paths for facilities with robust EHRs who can share clinical information with CRISP and for facilities without an EHR focused on pulling information from available electronic sources such as the Minimum Data Set and ancillary vendors supporting SNFs.

## Implementation Plan to Connect SNFs

A multi-pronged strategy is needed to connect all of the SNFs in Maryland to CRISP. The strategy must recognize and address the varying marketplace factors (i.e., competitive versus non-competitive regions), the lack of EHR adoption in some facilities, the varying capabilities of EHRs that SNFs have adopted, and financial barriers to HIE participation. All of these factors need to be considered when developing a realistic implementation plan to connect SNFs across the state.

Based on CRISP experience connecting SNFs to date and through conversations with stakeholders we have identified the following five steps that we will take to achieve our goal of connecting all SNFs across the state to CRISP:

1. **SNF Connectivity Program**
2. **Connect SNF Ancillary Vendors**
3. **Leverage MDS Data in CRISP**
4. **SNF Engagement and Learning Efforts**

---

<sup>9</sup> Colene Byrne, PhD & Michelle Dougherty, MA. "Long Term and Post-Acute Care Providers Engaged in Health Information Exchange," Report to the U.S. Dept. of Health & Human Services, 2013, available at <http://aspe.hhs.gov/daltcp/reports/2013/HIEengage.shtml>.



## **5. Expand Clinical and Reporting Infrastructure to Support Hospital/SNF Care Coordination Needs**

These steps combined provide a strategic path forward for CRISP to receive data from and provide access to the Clinical Portal to all SNFs in the state. Some steps are already in process and will be continued and expanded, while others will be implemented in the coming year. Below we outline each step in more detail.

### ***SNF Connectivity Program***

In order to connect their EHRs to CRISP, SNFs have to pay an interface or integration fee to their health IT developer and then face ongoing maintenance costs. These fees often present a financial barrier to SNFs' ability to share data with CRISP. To help address this barrier CRISP proposes to establish a SNF Data Exchange Support Program that will help offset the cost burden faced by SNFs when initially connecting to CRISP. Payments under the program will be tied to achieving set milestones. The first milestone is tied to signing the CRISP participation agreement and an interfacing agreement with their health IT developer. The second milestone is tied to going live with clinical data feeds. Under the proposed program, providers will be required to continue sending data for a minimum period of time or face a potential clawback penalty. Funding for the program will be supported through Medicaid HITECH 90/10 funds. To be eligible SNFs have to have accepted a Medicaid patient within the past 12 months. CRISP will prioritize the selection of eligible SNFs through the program based on a number of potential factors including but not limited to: readiness and willingness of the SNF to connect, technical integration capabilities of the SNF's EHR vendor, the EHR vendor's market share, and participation in priority health reform efforts (i.e. Regional Partnerships, etc.). We anticipate most SNFs in the state will be eligible to participate in the connectivity program.

### ***Connect SNF Ancillary Vendors***

To address the lack of electronic data available from SNFs without EHRs and to supplement the electronic data available from SNFs that have adopted EHRs, CRISP will increase efforts to connect SNF ancillary vendors—including institutional pharmacies, labs, and radiology.<sup>10</sup> Directly engaging ancillary vendors will help to create a common baseline set of electronic data available in CRISP from all SNFs in the state. Collecting data directly from these sources will allow CRISP to pull in data for all SNFs in the state—not just those with EHRs. CRISP has successfully implemented a similar strategy with lab and radiology vendors serving ambulatory and inpatient providers. CRISP will initially prioritize connecting institutional pharmacy vendors in 2017.

### ***Leverage MDS Data in CRISP***

DHMH has the ability to provide centralized access to MDS data from all SNFs in the state to CRISP. Similar to data from SNF ancillary vendors, MDS data could help fill information gaps from SNFs. CRISP has looked at two avenues to leverage MDS data moving forward: for point-of-care treatment purposes and to support reporting use cases. CRISP will work with DHMH to incorporate MDS data into the CRISP Reporting Service to leverage the data for future reporting efforts to support providers and Maryland agencies' needs.

For point-of-care treatment purposes in hospitals, MDS has significant limitations in its usefulness in evaluating the issues that brought the patient to the hospital, as the data is typically older than the event leading to the hospitalization. MDS data can be useful in determining the patient's usual state and certain

---

<sup>10</sup> For example, three institutional pharmacy vendors, Omnicare, PharMerica, and Remedi Senior Care, serve the majority of SNFs in Maryland. Connecting these three vendors would provide access to dispensed medication information from the majority of SNFs in the state.



social and demographic facts. [Appendix D](#) outlines the MDS data elements providers identified as useful for treatment purposes.<sup>11</sup>

In discussions with stakeholders, CRISP has heard differing perspectives on the utility of MDS data for treatment use cases. Some providers expressed an interest in viewing the data, while others felt the data would not be useful. A handful of HIEs in other states have recently started or are in the process of launching pilot efforts to provide a subset of MDS data elements to providers, but no results were available as of the writing of this report. To test the usefulness of MDS data at the point of care, CRISP will launch a pilot initiative, funded under a separate project, with SNFs, hospitals, and ambulatory providers. The results of the pilot will be evaluated to determine how CRISP will proceed.

### ***SNF Engagement and Learning Efforts***

In the past year, CRISP has significantly increased its outreach efforts to SNFs in Maryland. CRISP has entered into a partnership with LifeSpan Network, a Maryland association of LTPAC providers, to provide boots-on-the-ground outreach and education to their SNF members. This partnership supports CRISP's efforts to educate SNFs about the benefit of HIE, sign-up SNFs, and provides a feedback loop to CRISP on how services can be improved to better support SNF needs. Leveraging internal staff and key partners, such as LifeSpan, CRISP will continue its dedicated outreach, education, and onboarding work to connect every SNF in the state.

In addition to continuing and expanding existing engagement and onboarding efforts, CRISP will establish a learning network for connected SNFs to support the identification and sharing of best practices on how CRISP can be leveraged by other facilities. This effort will provide a forum for SNFs to come together and learn from their peers about impactful ways to leverage CRISP to support improved patient care.

### ***Expand Clinical and Reporting Infrastructure to Support Hospital/SNF Care Coordination Needs***

Improving care coordination between hospitals and SNFs is an important element to support the efforts of Maryland's Round Two State Innovation Model Design Grant. CRISP has an important role to play by ensuring the needed information is available to support care coordination between these two care settings. We spoke with hospital and SNF stakeholders to identify additional information they need to enable improved care coordination.

Stakeholders identified two categories of needs to support improving care coordination between hospitals and skilled nursing facilities. First, stakeholders identified a variety of data that they do not receive today that would support the treatment of patients at the point of care. Second, stakeholders identified a number of reports that would support their population health management efforts. [Appendix A](#) outlines the detailed findings from these discussions, identifying the data and reporting needs expressed by SNFs and hospitals. In the coming years, CRISP will work with SNFs and hospitals to address these data and reporting needs.

Under a separate project, CRISP is currently launching a pilot effort with SNFs to test an initial set of patient-level, panel-based reports that will be made available to them. CRISP is also working to create reports based on Medicare claims data that will provide detailed episode based reports for hospitals and SNFs in the state. These reports will include many of the specific items hospital and SNFs expressed interested in tracking including readmission rate, average length of stay, and total cost of care. CRISP will work to supplement this initial pilot effort with the additional items identified by hospitals and SNFs through this planning process and lessons learned from the pilot.

---

<sup>11</sup> Altarum Institute Center for Elder Care and Advanced Illness (2016) *Report on Information Transition into and out of Nursing Facilities, including Potential Use of MDS*.



As CRISP connects with more SNF EHR health IT developers, we will increase our experience with the quality and depth of information they capture and are capable of sharing. We anticipate the data captured in SNF EHRs will expand in the coming year as payment reform efforts across the nation create new incentives for SNFs to share data electronically with trading partners and as they push their health IT developers to offer additional capabilities.

## **Next Steps**

As implementation of Maryland's All-Payer Model continues, improving care coordination between hospitals and SNFs will increase in importance to Maryland stakeholders. CRISP is working to expand its technical infrastructure to support the cooperative IT needs of stakeholders to succeed in the All-Payer Model. CRISP will work over the next year to start implementation of the SNF connectivity strategy outlined in this report and expand on its initial success in connecting SNFs. In 2017, we will launch the SNF Connectivity Program to help address the financial barriers that often slow or inhibit SNFs ability to participate in HIE, which will be vital to our ability to get all SNFs in the state connected. As an interim milestone towards connecting every SNF in the state, we will connect 160 long-term post-acute providers by June of 2017. We will work to increase the amount of SNF data available in CRISP and we will launch an initial set of reports addressing hospital and SNF needs by the end of 2017. This reporting effort will be refined based on stakeholder feedback moving forward.

Looking forward, there are a number of additional areas CRISP can expand its existing capabilities to support care coordination between hospitals and SNFs. We will work with stakeholders to prioritize new use cases of interest. Examples of such efforts include: the development a concise-targeted summary containing valuable clinical information that SNFs can send along with a patient when they are transferred to a hospital that; a description of why the patient was sent to the hospital; and what the hospital needs to do to send the patient back to the SNF.



## **Appendix A: Summary of Hospital and Skilled Nursing Facility Data and Reporting Needs**

The following summary breaks reporting needs out by hospital and skilled nursing facilities. Addressing these stakeholders' needs will help to support the goal of the SIM Design work to develop a strategy to integrate care delivery for individuals who are dually eligible for both Medicaid and Medicare.

### **Stakeholder Identified Data/Reporting Needs**

First, stakeholders identified a variety of data that they do not receive today that would support the treatment of patients at the point of care. Second, stakeholders identified a number of reports that would support their efforts to undertake population health management.

#### ***Hospital Data Needs***

Hospitals identified the following data elements as needed from skilled nursing facilities to support treatment at the point of care.

- Encounter information
- Labs
- Medications
- Pressure ulcers
- Infections
- Discharge summary

#### ***New Use Cases of Interest***

- When a patient is discharged from a skilled nursing facility, there is significant interest in understanding the following:
  - Where the patient is being discharged/transferred to?
  - If the patient is being discharged home, what wraparound services are they being discharged with and who is providing those services?
- Some hospitals want to be able to pull discrete skilled nursing facility data out of CRISP to run reports on.
- Develop a method for tracking patient progress/trajectory in the skilled nursing facility to determine if their risk for readmission has changed since the patient was discharged from the hospital. This would allow the hospital readmission coordinator to reach out to the skilled nursing facility to come up with a joint plan to assist the patient.



**Table 2: Mapping of Hospital Data Needs with Potential Data Source**

	Top SNF EHR Vendors <sup>12</sup>			Ancillary Vendors		Other
	PCC <sup>13</sup>	HealthMEDX <sup>14</sup>	American Data <sup>15</sup>	Lab	Institutional Pharmacy	MDS
<b>Encounter information</b>	X	X	X			
<b>Labs</b>	X	X	X	X		
<b>Medications</b>	X	X	X		X	X (medication categories only)
<b>Pressure ulcers</b>	X	X	X			X (lacks desired specificity)
<b>Infections</b>	X	X	X			X
<b>Discharge summary</b>	X	X	X			
<b>INTERACT</b>	X					

### ***Hospital Reporting/Analytics Needs***

Hospitals identified the following common reporting needs. As the efforts with the waiver advance to move global budgeting beyond the hospital there will be additional common needs identified.

- Average length of stay
- Admission rate
- 30-day readmission rate
- ED visits
- Total cost of care for the skilled nursing facility
- Average cost per day per patient

In addition to the areas generally identified by hospitals, the following items were raised by minority of hospitals.

<sup>12</sup> Point Click Care, HealthMEDX and American Data are the top three EHR vendors by marketshare among Maryland skilled nursing facilities according to a recent Maryland Health Care Commission survey  
[http://mhcc.maryland.gov/mhcc/pages/hit/hit/documents/HIT\\_LTC\\_Scan\\_Brief\\_2014.pdf](http://mhcc.maryland.gov/mhcc/pages/hit/hit/documents/HIT_LTC_Scan_Brief_2014.pdf).

<sup>13</sup> Source: Leading Age 2016 EHR Selection Matrix  
[http://www.leadingage.org/uploadedFiles/Content/Centers/CAST/Technology\\_Selection\\_Tools/EHR\\_Matrix.pdf](http://www.leadingage.org/uploadedFiles/Content/Centers/CAST/Technology_Selection_Tools/EHR_Matrix.pdf)

<sup>14</sup> Ibid

<sup>15</sup> Ibid





- Bed/resource availability
- Successful discharge to the community

### ***Skilled Nursing Facility Data Needs***

Skilled nursing facilities identified the following data elements as needed from hospitals to support treatment at the point of care.

- Diagnosis and admit reason information included in hospital encounter data from all hospitals
- Timely discharge summaries
- Accurate reconciled medication list
- Medications
- Advanced directives

### ***New Use Cases of Interest:***

- Skilled nursing facilities want hospitals to use INTERACT as the transfer summary between the two settings. Some hospitals are asking skilled nursing facilities to use INTERACT transfer form when sending patients to them but are not sending using the corresponding INTERACT summary form when sending the patient back.
- Skilled nursing facilities want MDS and OASIS data to be incorporated into CRISP.
- Skilled nursing facilities want to be able to access information on patients prior to admission.
- One skilled nursing facility raised the idea of creating something similar to the care alert for skilled nursing facilities sending a patient to the hospital that would include valuable clinical information and a description of why the patient was sent to the hospital and what the hospital needs to do to send them back.

### ***Skilled Nursing Facilities Reporting/Analytics Needs***

*Skilled nursing facilities identified the following common reporting needs. As the efforts with the waiver advance to move global budgeting beyond the hospital there will be additional common needs identified.*

- Average length of stay
- Admission rate
- 30-day readmission rate
- ED visits
- Hospital utilization or admit by primary diagnosis
- Skilled nursing facilities want to be able to view the data/patient by payer type





**Table 3: Mapping of Hospital and Skilled Nursing Facility Reporting Needs with Potential Data Sources**

	Claims	MDS	ADT	Case Mix
Average length of stay	X	X	X	X
Admission rate	X	X	X	X
30 Day Readmission rate	X	X	X	X
ED visits	X	X	X	X
Total cost of care for the SNF	X			
Average cost per day per patient	X			
Hospital utilization or admit by primary diagnosis			X	X
Ability to view data/patient by payer type				

Items may require combining information from multiple data sources. For instance ADT or MDS and case mix data could be combined to determine a skilled nursing facility's 30-day readmission rate.



## Appendix B: Long-Term Care Facilities Connected to CRISP as of June 2016

	Encounter Information	Lab Results	Radiology Reports	Electronic Reports	CCDA Documents	Image Exchange	ENS Admit Reason	ENS Discharge Disposition
Asbury Communities – Asbury Methodist Village	✓							
Asbury Communities – Asbury Solomons	✓							
Augsburg Lutheran Home Maryland	✓							
Aurora Health Services – Calvert Manor Health Center	✓							
Aurora Health Services – Caroline Nursing and Rehab Center	✓							
Aurora Health Services – Citizen's Care and Rehab CTR of Frederick	✓							
Aurora Health Services – Long View Healthcare Center	✓							
Aurora Health Services – Odyssey Assisted Living at Montevue	✓							
Aurora Health Services – Senior Living of Manokin	✓							
Aurora Health Services – The Gables at Caroline	✓							
Berlin Nursing and Rehabilitation Center	✓							
CommuniCare – Bel Pre Health & Rehab	✓							



Center								
CommuniCare – BridgePark Health Care MD	✓							
CommuniCare – Ellicott City	✓							
CommuniCare – Fayette	✓							
CommuniCare – Forestville	✓							
CommuniCare – Fort Washington	✓							
CommuniCare – Laurelwood Healthcare Center	✓							
CommuniCare – Marley Neck	✓							
CommuniCare – South River	✓							
Crofton Care and Rehabilitation Center	✓							
Erickson Oak Crest	✓	Jun-12		Jun-12				
Erickson Riderwood	✓	Jun-12		Jun-12				
Genesis Bradford Oaks Center	✓							
Genesis Caton Manor	✓							
Genesis Catonsville Center	✓							
Genesis Chesapeake Woods Center	✓							
Genesis College View Center	✓							
Genesis Corsica Hills Center	✓							
Genesis Crescent Cities Center	✓							
Genesis Cromwell Center	✓							

Chesapeake Regional Information System for our Patients

[www.crisphealth.org](http://www.crisphealth.org)



Genesis Fairland Center	✓							
Genesis Franklin Woods	✓	Jun-12						
Genesis Glade Valley	✓							
Genesis Hammonds Lane Center	✓							
Genesis Heritage Center	✓	Jun-12						
Genesis Homewood Center	✓							
Genesis Kingshire Manor Assisted Living	✓							
Genesis La Plata Center	✓							
Genesis Larkin Chase Center	✓							
Genesis Layhill Center	✓							
Genesis Loch Raven Center	✓							
Genesis Long Green	✓							
Genesis Magnolia Center	✓							
Genesis Multi-Medical Center	✓							
Genesis Patapsco Valley Center	✓							
Genesis Perring Parkway Center	✓							
Genesis PowerBack Rehabilitation – Brightwood Center	✓							
Genesis Salisbury Rehabilitation and Nursing Center	✓							
Genesis Severna Park Center	✓							



Genesis Shady Grove Center	✓							
Genesis Sligo Creed Center	✓							
Genesis Spa Creek Center	✓							
Genesis Springbrook Center	✓							
Genesis The Pines	✓							
Genesis Waldorf Center	✓							
Genesis Waugh Chapel Center	✓							
Genesis Woodside Center	✓							
LifeBridge Levindale	✓	Aug-12	Aug-12					
Lorien Health Systems – Bel Air	✓							
Lorien Health Systems – Bulle Rock	✓							
Lorien Health Systems – Columbia	✓							
Lorien Health Systems – Elkridge	✓							
Lorien Health Systems – Harmony Hall	✓							
Lorien Health Systems – Mays Chapel	✓							
Lorien Health Systems – Mt. Airy	✓							
Lorien Health Systems – Riverside	✓							
Lorien Health Systems – Taneytown	✓							
Lorien Health Systems – Turf Valley	✓							



NMS Healthcare Facilities	✓							
---------------------------	---	--	--	--	--	--	--	--



## Appendix C: Methods

The Implementation Plan for Connecting Skilled Nursing Facilities to Health Information Exchange was developed based on conversations with a wide variety of state and national stakeholders and CRISP's extensive experience. CRISP spoke with the following organizations in the development of this report.

- Central Illinois Health Information Exchange
- Coordinated Care Oklahoma
- KeyHIE
- CORHIO
- Delaware Health Information Network
- LifeSpan Network
- Health Facilities Association of Maryland
- Maryland Hospital Association
- FutureCare
- Genesis
- Wicomico Nursing Home
- Lorien Health System
- Ingleside Engaged Living
- Doctors Community Hospital
- George Washington University Hospital
- Great Baltimore Medical Center
- Anne Arundel Medical Center
- Upper Chesapeake Medical Center
- University of Maryland Rehabilitation & Orthopaedic Institute
- Answers On Demand
- PointClickCare
- Leading Age
- IMPACT Project
- Capital Coordinated Medicine
- Emory Healthcare
- RAND Corporation



## Appendix D: MDS Data Elements for Treatment Use Cases

The following MDS data elements were identified by stakeholders as being useful for treatment use cases.<sup>16</sup> Items marked with an asterisk are proposed composite elements that consolidate multiple MDS data element into a single data element. **A1800** Date of admission to SNF/NF

**A1600** Date of assessment

**A0310** Type of assessment

**A500-1000** Demographics (to assure correct identification and identify the report if printed)

**A1100;** Language

**\*Section B, Hearing Speech and Vision Deficits**, any needed devices to enable communication

**A1200** Marital status

**Section I Diagnoses** - active diagnoses checked – include tobacco use from J1300

**A1500** Serious mental illness or developmental disability flag (PASRR)

**J1400** Prognosis of <6 months

**\*C0500** Summary Score of BIMS Mental status or C0700-100 Staff Assessment for Mental Status – categorized as normal, limited, moderate, or severe – if the record has multiple MDS entries, could state trend

**C1600** Acute Onset Mental Status Change (Y or N)

**\*Q0100** Resident participated in assessment, or had family (or significant other), or had guardian or legally authorized representative, or had no one

**\*C1300 Delirium** – yes, possible, or no

**\*D0200 Depression (PHQ-9) or by Staff D0500–** Scale categorized as depressed, sad mood, or normal

**E0100, E0200, E900-1000** Any of a list of problematic behaviors as Yes-No –delusions, hallucinations, disruptive behaviors directed toward others, self-harm, wandering

### Section G Function

- **\*Mobility - Self-Performance in G0110 A to F** – collapse to (independent, needing cane/walker/wheelchair/artificial limb (or other device), but then independent, needing personal assistance, needing full lift, wheelchair by another person, bedbound (again, if multiple MDS are available, could state trend)
- **\*Other activities of daily living (ADL) G0110 G to J** – N dependent on others/N tested (again, if multiple MDS are available, could state trend)

**H0300** Continence – bladder – continent, leakage, occasional incontinence, diaper, catheter intermittent, catheter indwelling

**H0400** Bowel Continence – continent, leakage, occasional incontinence, diaper

**H0600** Constipation – none, managed with diet and activity, managed with medications, managed with disimpaction or enemas

### Serious symptoms

- **\*J0300 to J0600, or J0800 and J0850** Pain – (collapse to Moderate to severe most or all of the time, Moderate to severe occasionally, mild pain, no pain)
- **J1100** shortness of breath
- **J1700** Falls in past month

---

<sup>16</sup> Altarum Institute Center for Elder Care and Advanced Illness (2016) *Report on Information Transition into and out of Nursing Facilities, including Potential Use of MDS*





**K0200, K0300-310** Height and weight and recent change

**K0510** Nourishment by IV, feeding tube, pureed diet, other therapeutic diet, or normal

**L0200** Teeth and appliances (broken or ill-fitting denture, edentulous, abnormal mouth tissue, cavity or broken teeth, inflamed or bleeding gums, mouth pain or problems chewing) [Yes or No to these]

**M0100** high pressure ulcer risk

**\*M0300 C1 or D1 or E1 or F1 or G1** Stage 3 or 4 or unstageable pressure ulcer present – if yes – M0610 for size - LxWxD

**\*M1030-M1200** Other skin problems – Y or N

**O0100, O0400, O0500** Other treatments ongoing (medications to be sent separately)

**O0250 A** Influenza Vaccine (Y or N) and **O0250 B** if Y

**O0300 A** Pneumococcal Vaccine (Y or N)

## **Appendix C**

# **Maryland Population Health Improvement Plan: Planning for Population Health Improvement**



# Maryland Population Health Improvement Plan: Planning for Population Health Improvement

December 31<sup>st</sup>, 2016

## **Table of Contents**

<b>Executive Summary .....</b>	<b>4</b>
<b>Introduction to Planning for Population Health Improvement .....</b>	<b>5</b>
<b>Maryland Population Health System Transformation.....</b>	<b>6</b>
<b>The Maryland All-Payer Model Background</b>	
<b>Planning for Population Health Improvement within the Maryland Context</b>	
<b>Existing Population Health Infrastructure</b>	
<b>Importance of Population Health Improvement Planning Data</b>	
<b>Broadening the Concept of Prevention .....</b>	<b>13</b>
<b>Population Health Management and Population Health Improvement</b>	
<b>3 Buckets of Prevention</b>	
<b>Stakeholder Engagement .....</b>	<b>17</b>
<b>Planning for Population Health Improvement: Prioritization Framework and Process.....</b>	<b>18</b>
<b>Planning for Population Health Improvement: Net Savings and Return on Investment (ROI) Concepts .....</b>	<b>21</b>
<b>Future Design Work for Planning for Population Health Improvement.....</b>	<b>23</b>
<b>Planning for Sustaining Population Health Improvement</b>	
<b>Next Steps</b>	
<b>Vision for Implementation .....</b>	<b>28</b>
<b>Bibliography .....</b>	<b>29</b>

## **Glossary of Terms**

ACO: Accountable Care Organizations  
CDFI Fund: Community Development Financial Institutions Fund  
CHNA: Community Health Needs Assessment  
CMMI: Center for Medicare and Medicaid Innovation  
CMS: Centers for Medicare and Medicaid Services  
CPC+: Comprehensive Primary Care Plus  
CRA: Community Reinvestment Act  
CRISP: Chesapeake Regional Information System for our Patients  
DHMH: Department of Health and Mental Hygiene  
ED: Emergency Department  
ER: Emergency Room  
GBR: Global Budget Revenue  
GHHI: Green and Healthy Homes Initiative  
HIE: Health Information Exchange  
HSCRC: Health Services Cost Review Commission  
ICN: Integrated Care Network  
LHIC: Local Health Improvement Coalitions  
LMI: Low and Moderate Income  
MMPP: Maryland Multi-Payer Patient-Centered Medical Home Program  
OPHI: Office of Population Health Improvement  
PCMH: Patient-Centered Medical Home  
ROI: Return on Investment  
SBHC: School-based Health Centers  
SHIP: State Health Improvement Process  
SIB: Social Impact Bond  
SIM: State Innovation Model

## Executive Summary

Health is fundamentally important to the wellbeing of Maryland's citizens, its financial security and its safety. Maryland ranks 18<sup>th</sup> in the Nation in terms of overall population health and is currently positioned to do much better. The Population Health Improvement Plan ("The Plan") presented here proposes concepts and a framework for improving population health in Maryland. The Plan describes the first phase of an extensive, collaborative process that will need to be undertaken in Maryland to develop a multi-sectoral approach to improve the health outcomes and health equity of Marylanders. Ultimately, a long-term plan will be realized through ambitious targets for health improvement and sustainable investment in population health.

In order to support the goals of the All-Payer Model and in preparation for population health transformation in Maryland, the Office of Population Health Improvement (OPHI) at the Department of Health and Mental Hygiene (DHMH) Public Health Services developed the *Population Health Improvement Plan: Planning for Population Health Improvement*. As the Maryland health care system increasingly migrates toward adopting public health approaches in order to meet the performance goals of the All-Payer Model, it requires that population health improvement beyond the clinical space to address all factors that determine health; the social determinants of health and health equity.

The Plan conceptually presents a prevention framework for strategies founded in the concepts promulgated by the DHMH State Health Improvement Process, University of Wisconsin's County Health Rankings and the Centers for Disease Control and Prevention's Associate Director of Policy, *3 Buckets of Prevention*<sup>1</sup>. The Plan encourages its audience to elevate social determinants of health, health equity, and sustainability of priority actions in order to encourage the creation of a portfolio of feasible and effective priorities that drive change. Furthermore, the Plan prompts an ongoing discussion to consider return on investment and net savings as concepts and, potentially, as tools that can be mobilized when planning for population health improvement. Finally, the plan outlines future and continuing work including the following: population health priority development, continued stakeholder engagement and alignment, exploration of sustainable funding mechanisms for population health improvement, continued alignment with the All-Payer Model, the Maryland Comprehensive Primary Care Model, Maryland Medicaid and Medicaid Dual Eligibles care delivery strategy, and integration with the State Health Improvement Process (SHIP).

---

<sup>1</sup> Auerbach, J. (2016). The 3 buckets of prevention. *Journal of Public Health Management & Practice*, 22, 215-218.

## Introduction to Planning for Population Health Improvement

Maryland's foundational design work on a population health improvement framework and process provides an initial roadmap for a variety of partners within Maryland to identify and guide future planning for population health improvement activities and priorities. The Plan's intent is to begin to explore Maryland's population health improvement vision of a public health system that functions as a fully integrated system of health (healthcare and public health) for the individual regardless of the resident's location or complexity. Through a strategic thought framework, the Plan provides initial discussion of a framework and process for identifying population health priorities and emphasizes the need for future consideration of how population health improvement priorities can be feasibly invested in and sustained in order to address population health improvement priorities in alignment and in support of Maryland's pre-existing and future proposed All-Payer Model goals.

The Plan is intended to be used by the Maryland State Department of Health and Mental Hygiene (DHMH) and the below listed stakeholders to catalyze and guide future population health improvement planning discussions and actions. The stakeholders include but are not limited to State Agency partners (Housing, Transportation, Planning, Healthcare Financing, Education, etc.), Federal partners (Centers for Medicaid and Medicare Services, Health Resource & Service Administration, etc.), Local Health Departments, community-based organizations, non-medical health partners, hospitals, payers, providers, consumers, Local Health Improvement Coalitions (LHICs), youth councils, county leadership, legislators, and other groups as appropriate.

Rather than laying out a population health improvement agenda, the Plan looks to provide a launch point for in-depth and collaborative conversation and planning for population health improvement in the state of Maryland. **The Plan intentionally suggests, through a series of thought frameworks, that planning for population health improvement requires focusing beyond the healthcare clinical space and into the innovative non-medical healthcare space to comprehensively address all factors that determine health. Further, the Plan looks to elevate an existing conversation and recognition that to improve population level health outcomes requires the prioritization of efforts that address, invest in, and sustain health equity.** Health equity is defined as everyone's opportunity to attain their highest level of health due to the absence of systemic disparities in health, including the social determinants of health<sup>2</sup>.

---

<sup>2</sup> Braveman, P. & Gruskin, S. Defining equity in health: Theory and methods. *J Epidemiology Community Health* 2003;57:254-258 doi:10.1136/jech.57.4.254; <https://healthequity.sfsu.edu/content/defining-health-equity>; <https://www.apha.org/topics-and-issues/health-equity>

“...equity in health is the absence of systematic disparities in health (or in the major social determinants of health) between groups with different levels of underlying social advantage/disadvantage—that is, wealth, power, or prestige. Inequities in health systematically put groups of people who are already socially disadvantaged (for example, by virtue of being poor, female, and/or members of a disenfranchised racial, ethnic, or religious group) at further disadvantage with respect to their health; health is essential to wellbeing and to overcoming other effects of social disadvantage. Equity is an ethical principle; it also is consonant with and closely related to human rights principles. “

Long term, planning for population health improvement requires an ongoing discussion that considers the concepts of return on investment and net savings as potential tools that can be mobilized when planning for population health improvement and the requisite investment. Finally, the Plan outlines future and continuing work including the following: population health priority development, continued stakeholder engagement, exploration of sustainable funding mechanisms for population health improvement, continued alignment with the All-Payer Model, and integration with the SHIP.

## **Maryland Population Health System Transformation**

The State of Maryland is more committed than ever to achieving better care, better health, and moderated cost growth through our groundbreaking and innovative Maryland model. Maryland, under agreement with the Centers for Medicare & Medicaid Services (CMS), launched the All-Payer Model in 2014 to transform the health care delivery system and accomplish these goals. The All-Payer Model is changing the way Maryland hospitals provide care, shifting from a financing system based on volume of services to a system of hospital-specific global revenues and value-based incentives. While still in the early stages of transformation, Maryland has already achieved success in improving care and limiting hospital cost growth.

### **The Maryland All-Payer Model Background**

In 2014, the State of Maryland signed an agreement with CMS to implement the Maryland All-Payer Model to limit total hospital health care cost growth per capita while improving quality of care and health outcomes. With the implementation of hospital global budgets, financial incentives changed for Maryland hospitals; the business model shifted from generating volume in the hospital setting to encouraging population health management strategies that can reduce avoidable utilization and improve quality of care in the hospital<sup>3</sup>. Maryland hospitals have responded to these incentives by focusing on

---

<sup>3</sup> Definition of Global Budgets:

“Global Budget Revenue (“GBR”) methodology is central to achieving the three part aim set forth in the All-Payer Model of promoting better care, better health, and lower cost for all Maryland patients. In contrast to the previous Medicare waiver that focused on controlling increases in Medicare inpatient payments per case, the new All-Payer Model focuses on controlling increases in total hospital revenue per capita. GBR methodology is an extension of TPR methodology, which encourages hospitals to focus on population-based health management by prospectively establishing a fixed annual revenue cap for each GBR hospital.

The Total Patient Revenue System (“TPR”) is a revenue constraint system available to sole community provider hospitals and hospitals operating in regions of the State characterized by an absence of densely overlapping service areas. The TPR system provides hospitals with a financial incentive to manage their resources efficiently and effectively in order to slow the rate of increase in the cost of health care. The TPR also is consistent with the Hospital’s mission to provide the highest value of care possible to the community it serves.

Under GBR and TPR contracts, each hospital’s total annual revenue is known at the beginning of each fiscal year. Annual revenue is determined from an historical base period that is adjusted to account for inflation updates, infrastructure requirements, population driven volume increases, performance in quality-based or efficiency-based programs, changes in payer mix and changes in levels of UCC. Annual revenue may also be modified for changes in services levels, market share shifts, or shifts of services to unregulated settings.”



high utilizers and well-defined areas for quality of care improvements. Maryland hospitals exceeded nearly all hospital performance targets in the first two full years of the model<sup>4</sup>.

The initial five years of the All-Payer Model is referred to as Phase 1, with a transition to a broader All-Payer Model (second term) expected in the following years. The second term of the All-Payer Model will expand the scope from hospitals to encompass the continuum of health care settings in performance measurement. Under this broader perspective, successful performance will depend on the clinical and financial alignment across the healthcare and public health system. Controlling the total cost of care and improving health performance outside of the hospital will depend on robust public-private collaboration and the leveraging of existing resources across the public health, social services and particularly the primary care arenas. These efforts will require providers and payers to address social determinants of health and health equity promote community-based care and utilize the highest value setting. Finally, success will require intense focus on particular community health status targets and the adoption of a long-term horizon to improve overall population health status.<sup>3</sup>

During Phase I, Maryland hospitals have begun to reduce avoidable hospital utilization, improve quality of care in the hospital and build working partnerships to “smooth” care transitions across service settings. Going forward, Maryland will require broader collaboration of social services; effective community health-oriented approaches; focus on the non-medical determinants of health; and, intimate collaboration between the healthcare and public health systems in order to meet population health improvement targets. Under the current All-Payer Model (Phase I), the Health Services and Cost Review Commission (HSCRC) actively works to encourage hospitals to develop care networks that extend beyond the hospital walls and the boundaries of the HSCRC’s regulatory authority. Under global budgets, hospitals are no longer financially incented to increase volume, but the same is not true for physicians and post-acute care providers. In response, Maryland has initiated an amendment to the current Model to incentivize alignment of providers who operate outside of the hospital arena. Maryland has requested an allowance to share resources with and provide incentives to non-hospital providers (i.e., community-based physicians; post-acute providers) when care improves and when there are accompanying savings. Maryland is also discussing with CMMI the possibility of establishing a CPC+ style advanced primary care model (e.g., Maryland Comprehensive Primary Care Model) with investment in primary care and care coordination for the Fee for Service Medicare-eligible population in order to catalyze and support primary care practice transformation efforts in support of the goals of the All-Payer Model.

### **Planning for Population Health Improvement within the Maryland Context**

To assure sustainability of the All-Payer Model, as well as achievement of its goals, the Maryland healthcare delivery system needs to demonstrate that it will establish partnerships and infrastructure that further transform the delivery of healthcare, improve health status, and reduce the total costs of care (TCOC).<sup>5</sup> The State remains committed to seeking greater care coordination, improved quality of care

---

<http://www.hscrc.maryland.gov/gbr-tpr.cfm>; [http://www.urban.org/sites/default/files/05\\_global\\_budgets\\_for\\_hospitals.pdf](http://www.urban.org/sites/default/files/05_global_budgets_for_hospitals.pdf)

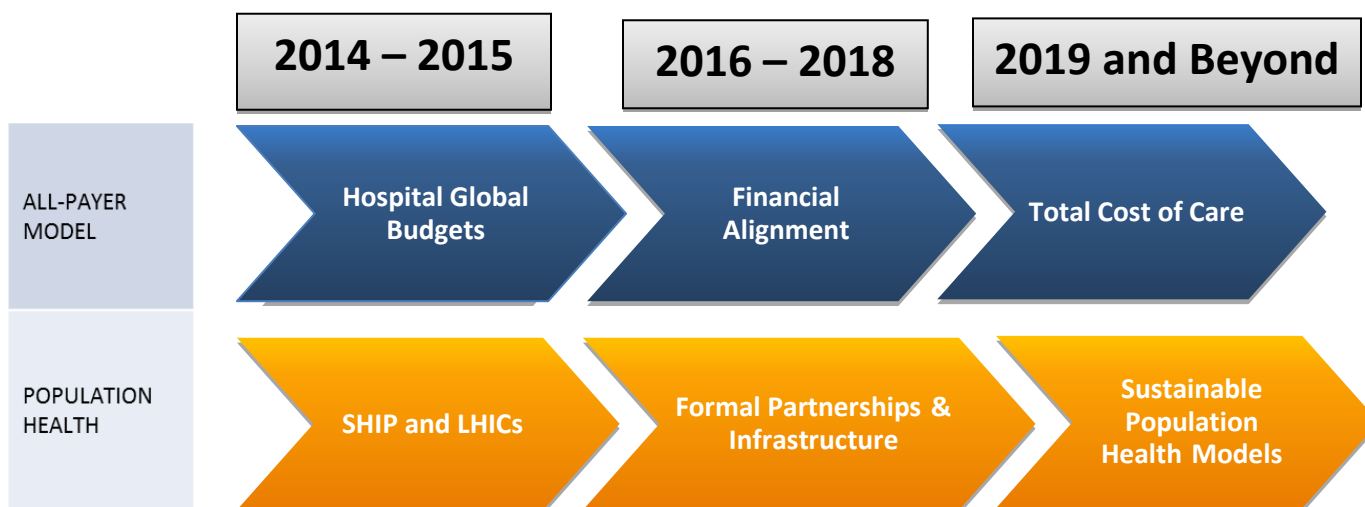
<sup>4</sup> Centers for Medicaid and Medicare Services (2014). Retrieved from <https://innovation.cms.gov/initiatives/Maryland-All-Payer-Model/>

<sup>5</sup> Total Cost Of Care “...is a full-population, person-centered measurement tool that accounts for 100% of the care provided to a patient.” <https://www.healthpartners.com/hp/about/tcoc/index.html>

and reduced costs for care for Marylanders through alignment of population health improvement planning with the goals of the All-Payer Model (Phase I and Phase II).

While the All-Payer Model has altered the delivery system through a change in financial mechanisms, complementary work has been taking place on the population health side to drive capacity to improve health status. Indeed, Maryland endeavors to further merge these two tracks to facilitate better partnerships and sustainable models of health. Near-term approaches include the Maryland Comprehensive Primary Care Model to drive prevention and improved chronic disease management. The longer term approach, however, is founded in the subject of this Plan. To this end, the alignment of population health improvement activity with the All-Payer Model is depicted below:

Figure 1: Population Health Improvement Alignment

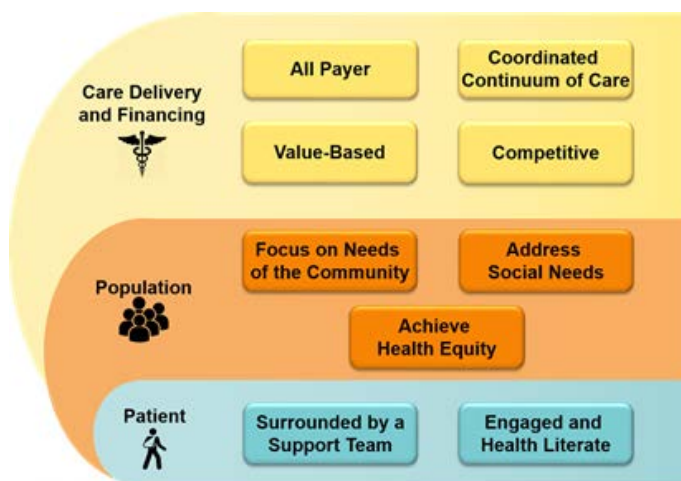


Source: Office of Population Health Improvement, DHMH, 2016

As the State undertakes initiatives to improve population health in Maryland, it is critical that these initiatives be implemented in the context of broader health care policy within the State. The prioritization process, framework, and concept discussions have been designed to work in concert with the State's broader policy goals, particularly the Maryland All-Payer Model in its current and future phases. Under the design for a second term of the All-Payer Model, the Model's commitments look to expand from hospitals alone to encompass the continuum of health care settings in performance measurement. Controlling the total cost of care and improving health metrics outside of the hospital will also depend on the Maryland Comprehensive Primary Care Model, robust public-private collaboration, other service delivery reforms, and the leveraging of existing resources across the public health system, social services, non-medical determinants of health, causes of health inequity, and the medical delivery system. Under the current All-Payer Model (Phase I), the State is steadily moving towards a broad-based, patient-centered health system. The State of Maryland envisions a comprehensive system that functions as a fully integrated healthcare and public health system for the patient regardless of the resident's condition or location so that patients will be able to seamlessly access services in the most appropriate care setting at

the right time with instant access to their health information. This vision is conceptually displayed in the diagram below:

Figure 2: Vision: An Integrated Delivery System



Source: Office of Population Health Improvement, DHMH, 2016

Planning for population health improvement recognizes that population health improvement priorities, and the population health management and improvement initiatives that accompany those priorities, work in parallel to payment and delivery healthcare system reform. Additionally, it recognizes that population health improvement functions to support the same goals of payment reform – access, quality, and cost of care. **While the changes to the health care delivery system are designed to improve care coordination and to deliver quality care more efficiently, planning for population health improvement furthers this mission by looking to prioritize actions that reduce the need for care before individuals enter the healthcare system, reduce reliance on health care services by addressing upstream social determinants, reduce health inequities, and reduce infrastructure inadequacies that give rise to care that could have been avoided.** While Phase I of the All-Payer Model focused on improved service delivery, and going forward, the second term warrants a broader perspective with a focus on total cost of care. The role of planning for population health improvement is to look to improve health by addressing the wide-ranging areas outside the health service delivery system that affect health outcomes over a longer horizon. This is where planning for population health improvement is placed into dialogue with the healthcare reform efforts within Maryland.

### Existing Population Health Infrastructure

Planning for population health improvement builds public health system transformation. In planning for this next generation of population health improvement and management it is helpful to consider the existing infrastructure investments and elements of alignment that have contributed to Maryland's success during Phase I; such as:

- Data analytics at the provider level
- Effective use of care coordinators/case managers
- Emergency Department-based services and linkage to appropriate services
- Increased access to care
- Use of Maryland's designated Health Information Exchange (HIE), CRISP to provide communications and data exchange across settings<sup>6</sup>
- Standardized protocols across clinicians in a local region
- Use of community health workers for community outreach and education
- Technology, such as telehealth
- Formation of Regional Partnerships - In response to the HSCRC's initiatives, Maryland has seen the formation of eight regional partnerships, each of which includes hospitals, county health departments, and community-based organizations and social services agencies. These partnerships are working collaboratively to identify community needs, determine resource requirements to best meet community needs and design strategies for deploying resources across the region. The collaborative model is expected to produce more effective care coordination models and maximize the use of specialized resources required of distinct populations such as frail elders, dual eligible Medicare and Medicaid beneficiaries, and chronic disease patients with specialty requirements. The long-term expectation is that these partnerships will collaborate to define population health improvement goals with particular attention to reducing risk factors.
- Maryland Medicaid and Medicare Dual Eligibles Care Delivery Strategy – Maryland dual eligible recipients comprise a disproportionate share of Medicaid and Medicare expenditures due to the population's complex health conditions. A proposal to CMMI is being developed for the State of Maryland to introduce an accountable care organization-type delivery model for dual eligibles (D-ACOs) that will provide stronger care management functions across payers, promote linkages with community-based supports and improve quality of life. To date, this population has generally not been enrolled in coordinated care models in Maryland, and the D-ACO model presents a huge opportunity to improve care coordination, heighten consumer satisfaction and reduce the total cost of care for this population. Success will depend heavily on effective models for outreach, data analytics, care coordination and integration of medical, behavioral and social services.
- Maryland Comprehensive Primary Care Model – The Maryland Comprehensive Primary Care Model (PCM) is designed to improve the health of Marylanders by delivering person-centric, efficient, and cohesive primary care. The PCM leverages the latest developments in advanced primary care medical home models that aim to strengthen the provision of comprehensive primary care services through payment reform and care delivery transformation. The PCM uses a provider framework that allows the patient to designate their own provider, which includes specialists. The hallmark of the PCM is the introduction of Care Transformation Organizations, which form the foundation for care management and population health resource infrastructure for primary care practices. Participating entities in the PCM will receive increased payments through CMS if the proposal is approved for 2018 implementation. Year 1 will focus on Medicare Fee-for-Service beneficiaries, with an incremental approach to all payers.

---

<sup>6</sup> Chesapeake Regional Information System for our Patients (CRISP). <https://www.crisphealth.org/>

- Re-balancing of health care resources to support outpatient care – With the investments made in care coordination and outpatient delivery models, Maryland has seen a major decline in hospital admissions and a re-balancing of health care resources. The shift of investments to outpatient delivery models has been significant, and plans for reducing inpatient capacity are rapidly developing.

These infrastructure efforts serve as foundational tools to re-make the delivery of health care and ultimately generate savings for the health care system. Sustaining success over time will require wrapping population health improvement planning around these initiatives and others. This will create opportunities for population health improvement planning to consider a prioritization process and framework that emphasizes population level action to sustain the goals of the All-Payer Model and alignment with the healthcare reform efforts that produce a more near-to-mid-term impact.

### Importance of Population Health Improvement Planning Data

Paramount to Maryland's population health improvement planning is a process founded in the ability to effectively measure the health of Maryland residents. Based on a composite of scores determined and disseminated by United Health Foundation's *America's Health Rankings*, Maryland has improved six spots in the national ranking of States, moving from the 24th position in 2013 to the 18<sup>th</sup> position in 2015. While much of this improvement has been attributed to expanded access to care through insurance coverage, it additionally includes the sustainment of a number of effective public health initiatives such as continued efforts in the areas of tobacco control, chronic disease prevention and management, infectious disease prevention, maternal and child health, and school readiness<sup>7</sup>.

In 2011, DHMH's, Office of Population Health Improvement (OPHI) developed and launched the Maryland State Health Improvement Process (SHIP) – a framework for accountability, local action, and public engagement to advance the health of Maryland residents. SHIP began with 41 health objectives in six vision areas – healthy babies, healthy social environments, safe physical environments, infectious disease, chronic disease and health care access – which are closely aligned with national Healthy People 2020 objectives. The objectives were chosen with input from the public health community and the general public. For each objective, a statewide baseline and target goal for improvement by 2014 were established. County-level data and data by race/ethnicity were provided where available. In 2011, health improvement targets were established for 2014, and performance review indicates that Maryland achieved 28 of the 41 SHIP targets in 2014. Moving forward towards 2017 targets, DHMH adapted SHIP to five areas – healthy beginnings, healthy living, healthy communities, access to healthcare, and quality preventative care- with 39 measures. The 39 measures are identified below:

Figure 3: State Health Improvement Process (SHIP)

1.	Reduce <b>infant mortality</b>
2.	Reduce the percent of <b>low birth weight</b> births

<sup>7</sup> United Health Foundation, America's Health Rankings. Retrieved from [www.americashealthranking.org](http://www.americashealthranking.org)

3.	Reduce rate of <b>sudden unexpected infant deaths (SUIDs)</b>
4.	Reduce the <b>teen birth rate (ages 15-19)</b>
5.	Increase the % of pregnancies starting <b>care in the 1<sup>st</sup> trimester</b>
6.	Increase the proportion of children who receive <b>blood lead screenings</b>
7.	Increase the % entering <b>kindergarten ready to learn</b>
8.	Increase the % of students who <b>graduate high school</b>
9.	Increase the % of adults who are <b>physically active</b>
10.	Increase the % of adults who are at a <b>healthy weight</b>
11.	Reduce the % of <b>children</b> who are considered <b>obese (high school only)</b>
12.	Reduce the % of <b>adults</b> who are <b>current smokers</b>
13.	Reduce the % of <b>youths</b> using any kind of <b>tobacco product (high school only)</b>
14.	Reduce <b>HIV infection</b> rate (per 100,000 population)
15.	Reduce <b>Chlamydia infection</b> rate
16.	Increase <b>life expectancy</b>
17.	Reduce <b>child maltreatment</b> (per 1,000 population)
18.	Reduce <b>suicide</b> rate (per 100,000)
19.	Reduce <b>domestic violence (per 100,000)</b>
20.	Reduce the % of young children with <b>high blood lead levels</b>
21.	Decrease <b>fall-related mortality</b> (per 100,000)
22.	Reduce <b>pedestrian injuries</b> on public roads (per 100,000 population)
23.	Increase the % of <b>affordable housing</b> options
24.	Increase the % of adolescents receiving an <b>annual wellness checkup</b>
25.	Increase the % of adults with a usual <b>primary care provider</b>
26.	Increase the % of children receiving <b>dental care</b>
27.	Reduce % <b>uninsured</b> ED visits
28.	Reduce <b>heart disease</b> mortality (per 100,000)
29.	Reduce <b>cancer</b> mortality (per 100,000)
30.	Reduce <b>diabetes</b> -related emergency department visit rate (per 100,000)
31.	Reduce <b>hypertension</b> -related emergency department visit rate (per 100,000)
32.	Reduce <b>drug induced</b> mortality (per 100,000)
33.	Reduce <b>mental health</b> -related emergency department visit rate (per 100,000)
34.	Reduce <b>addictions</b> -related emergency department visit rate (per 100,000)
35.	Reduce <b>Alzheimer's disease and other dementias</b> -related hospitalizations (per 100,000)
36.	Reduce <b>dental</b> -related emergency department visit rate (per 100,000)
37.	Increase the % of <b>children</b> with <b>recommended vaccinations</b>
38.	Increase the % <b>vaccinated</b> annually for <b>seasonal influenza</b>
39.	Reduce <b>asthma</b> -related emergency department visit rate (per 10,000)

Source: Office of Population Health Improvement, DHMH, 2016

The goal of the SHIP has been to provide jurisdiction-level data, establish a measurement cycle and assign accountability for health improvement at the local level. SHIP data is visually displayed in a

dashboard format. In addition to SHIP and reports prepared by DHMH, Maryland examines health status indicators/health behavior using national data sources that include but are not limited to:

- Behavioral Risk Factor Surveillance System (CDC)
- Youth Risk Behavioral Survey (CDC)
- America's Health Rankings (United Health Foundation)
- County Health Rankings (Robert Wood Johnson Foundation)
- The State of Obesity (Trust for America's Health)
- Commonwealth Scorecard (The Commonwealth Fund)

In addition to national databases and sources, Maryland leverages state-based surveillance systems and databases including but not limited to:

- Health Services Cost Resource Commission (HSCRC)
- Chesapeake Regional Information System for our Patients (CRISP)

Through surveillance and analysis of the aforementioned data sources, Maryland is able to utilize a process and system for benchmarking notable population health status improvements over the long term and identify continuing health status and health behavior challenges in Maryland. Where there are challenging areas, targeted resources and effective action plans could produce improved health outcomes for Maryland citizens.

Fundamental to understanding Maryland's health status is identifying where health disparity and health inequity exist. Assessment of both *health disparity* – differences in health outcomes among groups of people – and *health equity* – attainment of the highest level of health for all people through efforts that ensure that all people have full and equal access to opportunities that enable them to lead healthy lives – is integral to ensuring that the health of Marylanders is considered holistically within a historical and socio-ecological context that is shown to affect population health improvement<sup>8,9</sup>. By orienting towards a holistic perspective of population health improvement, Maryland looks to address the social determinants of health as promoted by the Centers for Disease Control and Prevention<sup>10</sup>. Additionally, evidence demonstrates that increasing investment in the social determinants of health produces long-term health improvements and reduces health care costs for targeted populations.

## **Broadening of the Concept of Prevention**

Population health improvement planning looks for health improvement over a long term horizon, yet for the purposes of planning for population health improvement longer term population health plans require clarity, dialogue, synergy, and alignment with short- and mid-term plans for health improvement.

---

<sup>8</sup> Health Equity Institute definitions <http://healthequity.sfsu.edu/content/defining-health-equity>

<sup>9</sup> CDC socioecological model framework for prevention <http://www.cdc.gov/violenceprevention/overview/social-ecologicalmodel.html>

<sup>10</sup> CDC definition social determinants of health: The complex, integrated, and overlapping social structures and economic systems that are responsible for most health inequities. These social structures and economic systems include the social environment, physical environment, health services, and structural and societal factors

<http://www.cdc.gov/nchhstp/socialdeterminants/definitions.html>



Conceptually this Plan utilizes the University of Wisconsin Population Health Institute County Health Rankings model to convey that nonmedical factors play a substantially larger role than medical factors do in health. In this model, clinical care is said to determine only 20% of an individual's health status, while socioeconomic factors account for 40% of the determinants, physical environment accounts for 10%, and health behaviors account for 30% of the determinants of health status.

With the advent of this concept paradigm, prevention as paramount to addressing clinical outcomes is gaining momentum. This concept recognizes that collaborative efforts of the clinical care delivery system with the public health, social services, housing, education and neighborhood development sectors have the potential to produce more effective prevention initiatives and lasting population health improvement. These efforts are, necessarily, beginning to be accompanied by new payment models and alignment of measurement and incentives across sectors. Research highlighting the impact of social determinants on health status is compelling, and recognizes that producing change requires community engagement, ongoing relationships and resources to include medical, housing, nutrition, social services, education, community development and economic supports<sup>11</sup>. This shifting paradigm further compels policymakers and providers to address health equity issues to determine how resource allocation can best improve access and empower communities toward better health. This, in turn, has fueled partnerships that better address upstream factors, or the factors that act as precursors to a clinical care need, by encouraging behavior/lifestyle changes and promoting healthier communities<sup>12</sup>. The existing examples of initiatives are not all new, some are current and emerging, funded and unfunded, however taken together there is capacity for these emerging practices to be braided into coordinated next generation models that support population health management, the clinical care system, and align population health improvement planning in order to link the continuum approach.

The population health issues identified within the University of Wisconsin Population Health Institute County Health Rankings model concept above (physical environment, social and economic factors, and health behaviors) highlight some of the major challenges facing the State that affect health outcomes but lie beyond the scope of the medical care delivery system itself. There is mounting evidence to demonstrate that increased visibility, consideration, and focused efforts to promote behavior change, increase the social and economic equity, and improve the physical environment can produce substantial health improvements and reduce health care costs for targeted populations<sup>13</sup>. Interventions are complex to design, and solutions are costly to implement therefore decisions about resource allocation across regions and in localities are complicated ones. Increasingly, as responsibility is being assigned for large populations, it demands a stronger focus on disease prevention and health promotion<sup>14</sup>. Often the areas of greatest need for population health improvement may sometimes be the areas with the weakest opportunity for the clinical care system to specifically influence, generate savings and self-fund initiatives; however these challenges point to opportunity where targeted resources, partnership, and effective action plans can produce improved health outcomes for Maryland citizens and the population when considered holistically along the continuum. Furthermore, as the concept of social determinants of health becomes firmly entrenched in the clinical care delivery system, the public health profession and the

---

<sup>11</sup> *Ibid.*

<sup>12</sup> Kindig, DA & Isham G. (2014) Front Health Serv Manage.. Population health improvement: a community health business model that engages partners in all sectors. 2014 Summer;30(4):3-20

<sup>13</sup> <https://muse.jhu.edu/article/364518/summary>; <http://aje.oxfordjournals.org/content/154/4/299.short>

<sup>14</sup> *Ibid.*



public policy arena will adopt models of operation with multi-sector collaborations as a key infrastructure element. Current and continual promulgation of these comprehensive strategy models target the social determinants of health in order to address the negative health impacts that stem from negative socioeconomic factors, disparities, and health inequities, all of which function counter to the prevention of disease and negative health outcomes.

## **Population Health Management and Population Health Improvement**

The population health improvement *planning* is premised on the emerging paradigm shift, orienting towards prevention, within population health and clinical care. This paradigm shift is paralleled with additional terminology, orienting the concepts of population health improvement on a continuum of prevention<sup>15</sup>.

Population health management refers to purposeful actions taken to achieve one or more desired health outcomes in a defined group of persons by coordinating and integrating health care, public health activities and the social and environmental determinants of health. Population health improvement has come to refer to these same efforts when adopted in a proactive and preventative oriented modality, when the target population is community-based and initiatives are focused on the larger population. Typically, the goals of population health improvement are met in the long-term. Population health improvement utilizes foundational concepts of population health management that can be systematized with further supports so that economies of scale can be realized and overall health outcomes can be improved.

Population health management and population health improvement initiatives work in parallel and with payment and delivery system reform, and function to support the same goals of payment reform. While the changes to the health care delivery system are designed to improve care coordination and to deliver quality care more efficiently, population health improvement initiatives are designed to reduce the need for care before individuals enter the healthcare system and reduce reliance on health care services by addressing the social determinants that give rise to care that could have been avoided.

While not categorically exclusive from each other, any model, concept, strategy, and/or initiative is often hard to categorize exclusively in a single realm - population health management or improvement – as nearly all initiatives aim toward risk reduction (reducing the factors that cause risk of negative health outcomes) and health promotion (encourage/promote the factors that reduce the risk of negative health outcomes), and nearly all health management goals ultimately have a long-term goals of population improvement. For the purposes of this Plan, focused on population health improvement planning, the need to address prevention on a continuum, mobilizing and integrating all available systems including the clinical and public health systems, is housed under the term of population health improvement.

## **3 Buckets of Prevention**

In order to move towards active prevention, utilizing population health improvement concepts, the CDC articulates a conceptual framework for population health improvement and prevention using three

---

<sup>15</sup> Kindig D, Asada Y, Booske B. (2008). A Population Health Framework for Setting National and State Health Goals. *JAMA*, 299, 2081-2083., Kindig DA. (2007). Understanding Population Health Terminology. *Milbank Quarterly*, 85(1), 139-161., Kindig, DA, Stoddart G. (2003). What is population health? *American Journal of Public Health*, 93, 366-369.

categories – identified as “buckets of prevention” – with which to categorize prevention interventions<sup>16</sup>. Each bucket reflects a different scope of activity, expands the reach to a broader population base, and opens a broader set of intervention options. Brief descriptions of the buckets are found below.

Figure 4: 3 Buckets of Prevention



Source: Auerbach, J. The 3 Buckets of Prevention<sup>17</sup>

#### **Bucket 1: Traditional clinical prevention interventions**

- Provided in a clinical setting
- Clinical services provided by traditional medical providers during a routine encounter
- Strong evidence base for efficacy and/or cost effectiveness
- Generally reimbursed, possibly mandated by insurance plans, (e.g., seasonal flu vaccines, colonoscopies, screening for obesity and tobacco use)

#### **Bucket 2: Innovative clinical prevention provided outside the clinical setting**

- Provided outside the clinical setting
- Services provided by traditional and non-traditional medical providers (e.g., CHWs, MD, NP, Care Manager, etc.)
- Clinical services provided to defined patient populations rather than one-to-one
- Proven efficacy in relatively short amount of time, 6 months – 3 years (e.g., CHW home assessment for asthma triggers)

#### **Bucket 3: Total population or community-wide interventions**

- Provided outside the clinical setting
- Targeted to an entire population or subpopulation in a defined geographic area
- Interventions may be focused on promoting behavior change through policies, insurance coverage, and/or advertising campaigns (e.g., laws establishing smoke-free zones) and are consistent with emerging evidence base

<sup>16</sup> Auerbach, J. (2016). The 3 buckets of prevention. *Journal of Public Health Management & Practice*, 22, 215-218.

<sup>17</sup> Auerbach, J. (2016). The 3 buckets of prevention. *Journal of Public Health Management & Practice*, 22, 215-218.

- Impact may not be demonstrated for many years or even a generation

**This Plan does not attempt to determine or define the “right” area to focus on rather it looks to present concepts and frameworks to insert population health improvement into the conversation as a mechanism for extending the efforts of the All-Payer Model successes and for linking the clinical care system to the public health system.**

The Population Health Improvement Plan utilizes these three buckets as an initial concept in describing strategies to address priority areas of public health improvement. The options to address priority areas of population health improvement can be oriented within this framework of the three buckets. The 3 Buckets of Prevention framework can then be used as a tool to examine priorities for different segments of the population. With this framework, priorities can be considered with the denominator being a segment of the population or the entire population, rather than simply an individual.

To this end, the SHIP, County Health Rankings and 3 Buckets of Prevention present conceptual frameworks for population health improvement prioritization; promote ongoing healthy lifestyle and healthy behavior at the individual, neighborhood, and statewide level with intention towards addressing health equity across communities through activities occurring outside a clinic or hospital; support the All-Payer Model goals to improve population health for Marylanders; and, suggest future design assessing the opportunity and feasibility of sustainable financing for the population health improvement initiatives.

## **Stakeholder Engagement**

DHMH’s stakeholder engagement process occurred through three distinct stages: a population health summit, stakeholder presentations, and external public comment period. The purpose of this process was to guide the development of this framework and planning document and to refine it through ongoing discussions with stakeholders across State agencies, county health departments, and other community representatives. The goal was to provide an accurate representation of the current environment in Maryland, to elucidate and identify innovations that are occurring elsewhere, and to work toward developing priorities for future policy around population health improvement.

In April 2016, DHMH convened an all-day program for health professionals and stakeholders representing varied interests in population health from across the State for Maryland’s Population Health Summit. Participants included local health department, local health improvement coalitions, key stakeholders from hospital systems, accountable care organizations, payers, providers, DHMH Staff and other health care reform stakeholders. The program included presentations about health status in Maryland and its comparative performance, reviews and insight into successful programs in Maryland, and presentations about health improvement programs across the country that have adopted innovative approaches. After these presentations, attendees participated in process-oriented workgroups to develop recommendations and priorities for population health improvement in Maryland. Each workgroup was encouraged to think through specific goals and/or specific population groups that represented the greatest opportunity for population-level health improvement within the frameworks presented earlier in the day (County Health Rankings, 3 Buckets of Prevention). Workgroups were also asked to begin to think through how to define the type of interventions that would be most effective for a given population.

Approximately 110 participants attended the Summit and provided the critical input to the prioritization matrix process presented within this Population Health Improvement Plan.

To supplement this input, DHMH issued a “post-Summit survey,” a set of questions seeking prioritization of health improvement initiatives and prioritization of cohorts as target populations. Fifty (50) surveys were returned to DHMH, providing critical input that factored into this plan. The information from this process served as the starting point for the development of this framework.

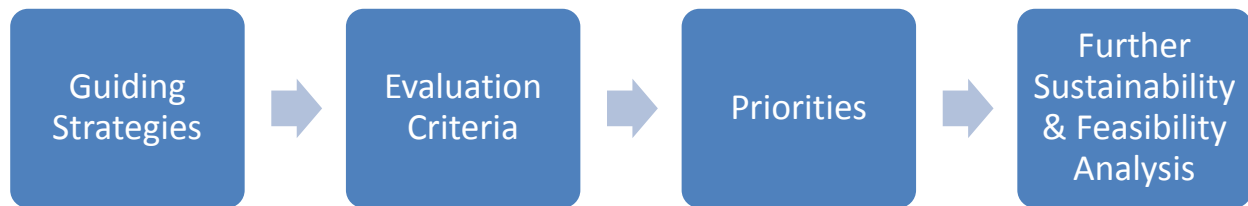
From July through November 2016, the Office of Population Health Improvement presented the Population Health Planning framework to targeted stakeholder groups. Presenters sought stakeholder expertise in topic areas of the plan such as refining the communication of prioritization concepts and frameworks. This process leveraged existing groups such as internal DHMH partners focusing on chronic disease, behavioral health, minority health and health disparities, cancer and tobacco prevention, and health information exchange analytics. In addition to these groups, local health officers, the Medicaid-led Duals Care Delivery Workgroup, HIE workgroups, HSCRC workgroups, Maryland Hospital Association, health systems, and other state agency workgroups were consulted. Workgroups and content experts were asked to provide direct feedback to the presentation and sections of the population health improvement plan, and the document was refined to reflect that input.

From December 2<sup>nd</sup> through December 12<sup>th</sup>, a draft of the Population Health Improvement Plan was released for an external public comment period. A letter with five focusing questions solicited feedback from stakeholders who participated in the summit, presentations, and their extended partners. This comment period sought to assess stakeholders’ perceptions of population health importance through the following topic areas: (1) investment (2) prioritization matrix, and (3) operationalization. The comments were then categorized qualitatively and assessed for incorporation into the final version of the population health improvement plan. This final Plan reflects the input received from this entire process.

## **Planning for Population Health Improvement: Prioritization Framework and Process**

The prioritization framework outlines a process by which competing priorities can be examined for their population health improvement impact. The framework is for thinking through the process of identifying a focus area and developing evaluative criteria to establish a strategy.

Figure 6: Flowchart of Process



The Population Health Improvement Plan is directed by the following overarching strategies and considerations:

- Building upon the conceptual frameworks of SHIP, County Health Rankings and Auerbach’s ‘3 Buckets of Prevention.’
- Address the social, environmental and economic determinants of health and engage those agencies funded to address these issues; strategy implementation will often require a management entity to integrate efforts across organizations, agencies, and other entities.
- Improve health equity by focusing prioritization and investment on approaches that address the root causes of health inequity – social determinants of health, disproportionate investment, resource allocation, etc.
- Engage the community to support, design, and sustain population health improvement initiatives.
- Employ evidence-based strategies to build upon existing home-based, school-based and tele-health services.
- Recognize that each locality (jurisdiction, region, entity, state) must establish their highest priorities, define achievable targets and determine what strategies are feasible, likely to be or are most effective in their communities, and are sustainable.
- Define outcomes targets that go beyond State SHIP<sup>18</sup> measures and require ongoing evaluation and prioritization; measurement is critical to monitor progress and to establish alignment.

By building upon the SHIP, robust data tradition, and focus on alignment of measures and incentives that exists in Maryland, the Population Health Improvement Plan presents a framework for assessing priorities. This process assumes an interaction and dialogue of the agenda’s priorities between local, regional, and State level implementers in order to implement active, ambitious and collaborative population health improvement initiatives. The expectation is that localization will occur allowing initiatives and more specific outcomes targets to be determined.

The evaluation criteria for the priority areas were developed after the Summit to guide priority-setting and strategy selection for Maryland’s Population Health Improvement Plan. Each of the evaluation criteria is described in greater detail below, and each element can be used to score or weigh priorities, depicted

---

<sup>18</sup> State Health Improvement Process: <http://dhmh.maryland.gov/ship/pages/home.aspx>

through a Harvey Ball chart or other weighting tool, and utilize for prioritization when conducting population health improvement planning<sup>19</sup>.

The framework uses the following concepts, each weighted to produce a composite score that can be depicted in a “Harvey Ball” scoring matrix or other weighing tool. In this prioritization process and framework, a “Harvey Ball” system is discussed not shown, and would indicate that an action to address a selected population health improvement priority with supporting evidence is assigned a score of 2 (fully colored Harvey Ball); an initiative with little or no evidence or contradictory evidence (e.g., short term success with weight loss programs, but little evidence of sustained weight loss), is assigned a score of 0 (empty Harvey Ball); all other strategies were assigned a “neutral” score of 1 (split Harvey Ball). The elements evaluated (or, criteria for scoring) included:

- Local Priority – Reflects identification of priority by hospital, Local Health Improvement Coalitions (LHICs), Local Health Department, and the State through community health needs assessments/priorities, as well as the priorities defined by stakeholder responses to the post-Summit survey.
- Evidence Base – Reflects the literature reviewed and promising practice evidence base to support the value of intervention (i.e., impact evaluations from across the country and experience in Maryland).
- Financial Return on Investment (ROI) – Reflects the magnitude of the financial return on investment, achieved through utilization reduction and tied to interventions/strategies.
- National Performance – Reflects the performance gap between Maryland’s SHIP and national data such as the County Health Rankings, United Foundation for America’s Health, and Centers for Disease Control and Prevention sources. Consideration of how to score the intervention based on whether Maryland met, exceeded, or has not met the benchmark was weighed respectively.
- Alignment with goals for collaboration and/or prevention – Reflects the degree of collaboration to assure the best use of resources.
- Magnitude of population / magnitude of burden that would be addressed – Reflects the number of people affected and/or the costs of care.

The priorities determined using the framework outlined above are intended to be consistent with the core initiatives established by State agencies, City/County Health Departments, and other stakeholders involved in the process. Priorities are aimed to mobilize around collaboration, focus areas, and goals for the State of Maryland as a whole, while allowing local partnerships to determine how to most effectively produce change using the prioritization criteria as a guide. The Plan is written with the assumption that each locality (regional, jurisdictional, neighborhood, practice, etc.) and community will work to leverage the resources of the public health, social services, clinical care delivery system, and local community-based groups and resources. The areas and strategies determined through the prioritization process, look to produce a balanced portfolio that will yield a combination of short-term, mid-term, and long-term returns on investment over the continuum of population health improvement.

---

<sup>19</sup> Harvey Ball Example and explanation: [www.exinfm.com/training/M2C2/Tools\\_Techniques\\_Handbook.ppt](http://www.exinfm.com/training/M2C2/Tools_Techniques_Handbook.ppt)

## Planning for Population Health Improvement: Net Savings and Return on Investment (ROI) Concepts

The following elements are provided to guide Population Health initiatives for investment. As outlined above, a critical element to guide investment priorities is the scope of the financial investment needed within the priority area and the impact of the investment. An assessment of the expected return per dollar invested is an important consideration for undertaking a project, and the tools for analyzing such a decision are well known and straightforward, although often complex to calculate accurately<sup>20</sup>. The fundamentals of such an analysis include the following:

- Revenue – What does the stream of revenue for the project look like? What are the monetary benefits associated with the project, and what quantity is assigned to each time period (short, mid, and long term for comparison purposes)? Are there non-monetary benefits associated with the project, and if so, how should they be valued in the analysis?
- Costs – What are the direct expenditures for implementing the project? When do they occur? Because direct expenditures are capital outlays, these may be the easiest part of the analysis to measure, but all costs are not direct. Projects can also have indirect and administrative costs that should be factored into the calculation. These are not easily quantified but need to be included to measure the financial impact properly.
- Risk – Revenue and cost projections have uncertainty. A complete analysis will assign probabilities for possible alternatives and calculate expected revenue and cost stream. Correctly stating these probabilities may be difficult and should involve stakeholder engagement.
- Time – Because direct project costs are often incurred early in the project life while revenues from investments tend to grow over time, revenues and costs cannot simply be aggregated across time periods without adjustment. First, with even mild inflation, the purchasing power of a dollar declines over time. Second, a dollar received today is more valuable than a dollar received in a year because the dollar received today could be earning interest. Finally, the accuracy of projected revenues and costs tends to be better in the near future than several years out. Therefore, revenues and costs that occur over time must be adjusted for the time value of money, a process referred to as *discounting*. The results of the analysis may be sensitive to the choice of discount rate, so it must accurately reflect expected inflation in the future and the after-inflation rate of interest (referred to as the *real* interest rate) that the invested funds could have generated in alternative investments.

---

<sup>20</sup> There is extensive literature on cost-benefit analysis, net present value analysis, internal rate of return analysis, and ROI analysis – all are the same basic tools with different perspectives. For further discussion beyond this summary, the following books are examples of discussions on the topic:

- Broadman, Anthony, David Greenberg, Aidan Vining, and David Weiner (2011) *Cost-Benefit Analysis: Concepts and Practice*, 4<sup>th</sup> edition. (Boston: Prentice Hall)
- Layard, Richard and Stephen Glaister (1994) *Cost-Benefit Analysis*, 2<sup>nd</sup> Edition. (Cambridge: Cambridge University Press)
- Phillips, Patricia Pulliam and Jack J. Phillips (2005) *Return on Investment (ROI) Basics*. (American Society for Development and Training)

- **Return on Investment (ROI) versus Net Present Value (Net Savings)** – The method used in the analysis can drive the conclusion and should be well understood before choices are made among competing priorities. ROI analysis and Net Present Value (or Net Savings) analysis are two competing methods for undertaking an analysis of costs and benefits. They use the same information in analyzing the data but present the results differently. This difference in presentation can yield different conclusions due to the underlying emphasis of each method. ROI analysis, for example, measures the expected return for each dollar invested in a project. Subject to a correctly conducted analysis as described above, a 20% ROI for Project A would appear to be a better choice than a 10% ROI for Project B. However, suppose Project A had a small scale while Project B affected a large number of people. The net savings for the project associated with Project B could actually save more total dollars, even though the savings per dollar is not as great as for Project A. Therefore, the goals of the investing organization are important to the method selected – maximizing net savings in total or getting the highest return per dollar invested. The conclusions from the two approaches are not necessarily the same for ranking projects.
- **Savings Accrues to Whom** – Finally, each analysis of ROI/Net savings analysis should account for the recipient of the savings. That is, will the project look broadly at the improved quality of life to society? Or will the analysis look to the direct return on investment? If a private business is undertaking an investment analysis, the benefits clearly accrue to that business – the investors might be pleased if someone else benefits from their project, but from their perspective the financial analysis hinges on the dollars they invest and the benefits they get in return. For governments and organizations, an improvement in population health may both lower health care costs and further a public health mission. Should any or all of these benefits count as project benefits? The decision will affect the financial viability and sustainability of the project.

While the data to make theoretically pure estimates may not exist, the above framework emphasizes factors that must be assessed in each financial analysis in developing investment priorities. For example, suppose that the precise risks associated with costs and revenues may not be available to be factored into an analysis, which is frequently the case. Two projects may have the same ROI, but stakeholders may have a sense that one investment opportunity is riskier than the other. All else equal, the riskier project would be ranked lower in priority to recognize the unmeasured risk in the analysis.

Finally, it is important to consider that other nonfinancial factors are important to developing priorities. For example, the need to address healthcare inequities within the social determinants of health could be a powerful motivation for selecting specific investments, aside from the financial considerations. Both the financial and nonfinancial factors should factor into the final development of priorities, and that requires political and policy decisions, not a formula for prioritization.



## Future Design Work for Planning for Population Health Improvement

The success of Phase I of the All-Payer Model, leveraging hospital level global budgets to control total hospital cost growth on a per capita basis, is emerging as a prototype for state-level approaches to shift from volume- to value-based payment. As previously discussed, in 2019, Maryland intends to expand its initial test from total hospital costs to total cost of care as part of second term of the All-Payer Model, Phase II. The next phase is contingent upon clinical and financial alignment throughout the health system. State agencies are currently engaged in several initiatives to support this transformation including the All-Payer Model Progression Plan, Maryland Comprehensive Primary Care Model, Medicaid and Medicare Dual Eligibles care delivery strategy, health professional workforce expansion, and care coordination infrastructure investments such as the Regional Partnerships. All of these efforts aim to transform the entire delivery system, to link payment to value, expanding care coordination data and analytic tools, and focus stakeholders on population health.

### Planning for Sustaining Population Health Improvement

The public-private collaboration necessary to achieve early success under the All-Payer Model's ambitious financial, utilization, and quality targets has been robust and has accelerated since 2014. Continued success in reducing potentially avoidable utilization to meet financial targets and improvement in infrastructure and short-term interventions to alter utilization and quality measures will become increasingly difficult in the years ahead without a non-hospital system-wide approach targeted on improving health outcomes.

Accordingly, maintaining a positive trajectory in Phase I of the All-Payer Model, and eventually in Phase II, will require a robust population health focus that supplements the All-Payer Model. While this document presents a conceptual framework for determining priorities and placing them on the population health improvement continuum, it will be vital for the State to take the next step and develop a roadmap for sustainable, long-term investment in population health in Maryland that aligns the All-Payer Model efforts across the clinical care system and facilitates continued public-private collaboration. This roadmap will plan for sustaining improvement in population health by identifying feasible and collaborative financing mechanisms.

The Population Health Improvement Plan presented here presents the framework for improving population health in Maryland, the first phase of an extensive, collaborative process that will need to be undertaken in Maryland to develop a multi-sectoral approach to improve the health outcomes and health equity of Marylanders. Ultimately, a long-term plan that sets ambitious targets for population health improvement and outlines potential financial mechanisms for sustained investment in population health, leveraging various financial sources, traditional and non-traditional, will look to be used to build upon the foundational population health improvement concepts presented in this Plan.

A sustainable long-term Population Health Improvement Plan will cover the following areas:

- **Long-term population health improvement targets** – Long-range targets for population health based on the SHIP and broader measures of population health developed under the second term of the All-Payer Model.

- **Service/intervention approaches** – A review of emerging strategies in Maryland compared to proven clinical and community-based interventions, including their potential to reduce admissions/readmissions and future health expenditures. Recommendations on strategies for different risk groups, such as high utilizers, rising risk patients, and healthier populations with some risk factors.
- **Return on investment (ROI) analysis**– ROI calculations based on potential reductions in health care utilization from meeting new population health improvement targets through implementation of recommended services/interventions and consideration of the costs associated with implementation. Current efforts in the State will be included as inputs.
- **Financing** – A review of financing and reinvestment mechanisms for long-term sustainability of the proposed services/interventions. Different financing mechanisms may be considered for different risk groups. Potential financing streams may include hospital savings generated under the All-Payer Model, targeted community benefit dollars, private foundations, health trusts, social impact bonds, and braided funding from other sources.
- **Structure and governance** – Options for shared decision making on priority investments.

## Next Steps

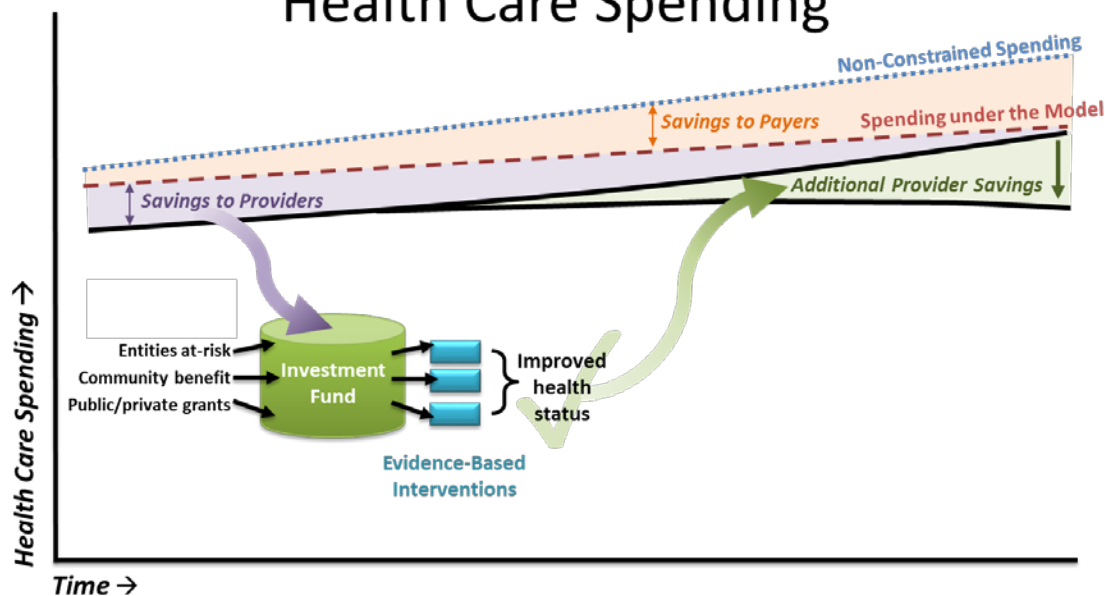
As Maryland advances into the next generation of health promotion, Maryland will implement provider-level initiatives, community-level initiatives and broad-based population-level initiatives. As such, Maryland will draw on many financing sources to reflect the scope of activity. The different financing sources will also reflect expectations for return on investment timelines. Different financing sources are likely to be used to support initiatives with near-term, mid-term, and long-term return on investment projections, and to support pilot programs versus established programs. This is referred to as a balanced portfolio.

Future work considers the suitability of each financing model within context of the Maryland environment. It seeks to comprehensively assess the existing investments in population health improvement strategies, as defined by the prioritization matrix framework, and looks to explore how to leverage those existing investments, establish new financing mechanisms, and govern the braided investments towards the long term priorities and goals of the All-Payer Model. This work culminates in a deliverable of a balanced portfolio that comprehensively outlines the financing model options, the feasibility and sustainability of different models for different population health improvement initiatives, and a process by which to consider implementation and governance of the financing models.

This future design work looks to begin positioning the conversation around investment in the long-term, broad-based population health improvement initiatives that are less likely to have a near-term return. For efforts that have long-term yields, or where the returns on investment are too diffuse for direct benefits to accrue to the hospital or to its partners directly, other funding mechanisms may be required. A process for assessing financing sources for population health improvement and prevention activities are outlined below. It is understood that each potential funding source differs along a number of dimensions, including

sustainability of funding source, political and community support for funding allocation, and implications for recipients of the return on investment. The potential sources listed below are neither comprehensive nor prioritized.

Figure 5: Health Care Spending Concept



This future design work proposes that the below potential financing models will be considered for the five priorities outlined in the prioritization matrix framework. The potential financing models are: hospital

community benefit dollars, social impact bonds, pay for performance/success contracting, community development financial institutions funds, financial institutions, large employers, foundations and other philanthropic sources, and taxes. These financing models would be assessed within the Maryland context and within the framework of the prioritization matrix. Brief descriptions of the following financing models to be explored can be found below:

#### *Hospital Community Benefits Dollars*

Alignment of hospital's community health needs assessments (CHNAs) would be guided by the very same priorities and focus areas outlined in the prioritization matrix. Assessment of how to promote those goals through community benefit dollar allocation would be conducted in tandem with the hospital and would look to prioritize the appropriate populations.

#### *Pay for Success/Social Impact Bonds*

A unique alternative to finance limited, well-defined initiatives is known as a Social Impact Bond (SIB). Often referred to as a "Pay for Success" agreement, this model represents a performance-based contract that involves government, a private investor or Foundation, a social services provider and an external evaluator. It operates by having a government agency define an outcome it wants to see achieved relative to a specified population over a set period of time (e.g., reduce recidivism rate by 10% over 5 years among nonviolent offenders in the prison system). The government agency contracts with an organization that pledges to achieve the specified outcome(s), and the government commits to pay an agreed-upon sum if the organization is successful. The organization raises money from socially-minded investors to advance the program costs; these operating funds are paid to the social service provider(s) that will provide the services. If the outcomes are achieved, the government agency pays the organization, and the investors receive a return on their principal. If the outcomes are not achieved, the government pays nothing. If the project exceeds performance targets, investors may earn a profit.

While referred to as "bonds," these financial agreements operate as private loans, except that they are repaid only if specific measurable outcomes are achieved. The goal is to encourage private investors to fund proven social programs by providing upfront support to the programs that aim to improve long-term outcomes.

The Social Impact Bond model could be valuable to build long-term relationships across sectors within a region or to finance a focused initiative that is of interest to a specific community or population.

#### *Community Development Financial Institutions Fund*

The Community Development Financial Institutions Fund (CDFI Fund)<sup>21</sup> provides another potential financing model for population health improvement. It originated in 1994 to support community development through loans and investments in minority and economically distressed communities; these investments are aimed at building business, creating jobs and revitalizing neighborhoods. More recently, it has come to focus on projects that improve health and reduce health care costs in low income neighborhoods, building a collaborative approach to community development finance and public health. As one industry representative stated, there is the recognition that "the goals of reducing poverty and

---

<sup>21</sup> <https://www.cdfifund.gov/Pages/default.aspx>

improving health outcomes are mutually reinforcing.” In several cases, the CDFI Fund has made loans available to distressed neighborhoods for major initiatives, and private foundations and the corporate business industry have then contributed to comprehensive neighborhood strategies. The investments generally require a return at a very low interest rate and must meet general community development guidelines.

#### *Financial Institutions*

The Community Reinvestment Act (CRA) provides an opportunity for funding neighborhood development projects. The CRA is a series of federal statutes and regulations that require institutions holding FDIC-insured deposits to help meet the credit needs of the communities in which they operate, including entities and individuals from low and moderate income (LMI) neighborhoods. Activities that qualify for CRA credit include Public Welfare investments which are identified as investments that promote the public welfare by providing housing, service or jobs that primarily benefit LMI individuals. Also qualifying are community development projects that promote affordable housing and financing activities that revitalize LMI areas. Maryland could work to design activities incorporating particular health improvement features consistent with the priority goals for the State.

#### *Large Area Employers*

Large employers may be willing to invest in health promotion initiatives to the extent that these initiatives are judged to impact absenteeism, performance / productivity, disability claims and/or the ability to recruit and retain a skilled workforce.

#### *Foundations and Other Philanthropic Sources*

Major initiatives are underway through foundations to provide significant funding and long-term commitment for neighborhood development projects designed around health improvement and economic development goals. Projects are focused on housing, transportation, land use, food systems and culture change to create “healthy space” and healthy lifestyles. Some foundations and philanthropies to consider are:

- Kresge Foundation
- Robert Wood Johnson Foundation
- Centers for Disease Control and Prevention (CDC) grant-funded initiatives
- Alliance for a Healthier Generation
- PEW Charitable Trust Resource
- Change Lab Resources
- Others

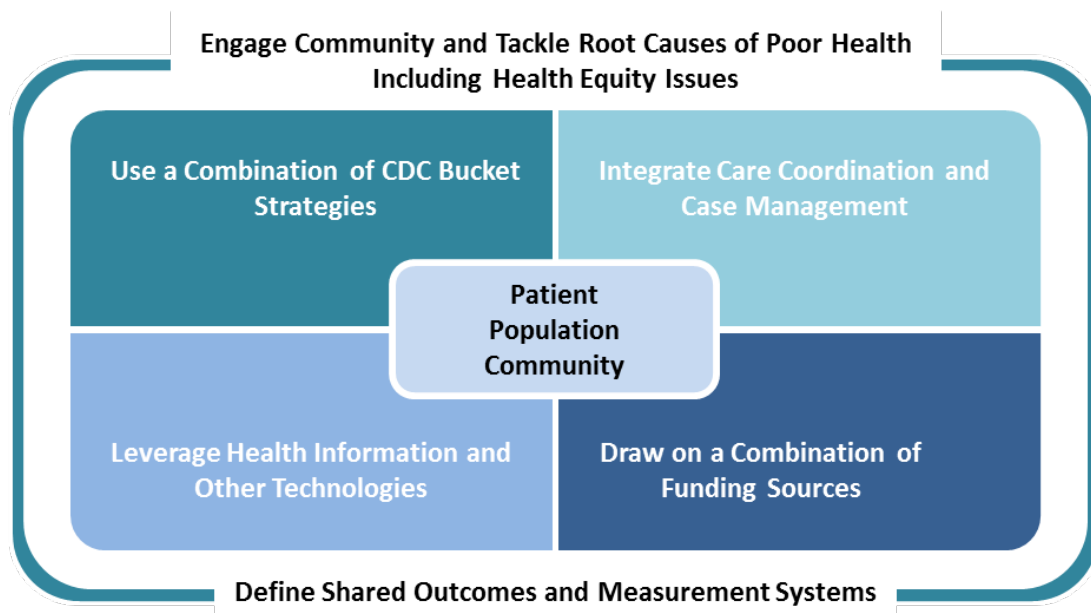
#### *Taxes to discourage unhealthy behaviors*

Another source of funds may be generated through prevention efforts themselves, aimed at discouraging unhealthy behaviors. An example would be taxes or fees imposed on the consumption, production, or distribution of products with known health risks such as tobacco, sugary beverages and alcohol. Clearly, this requires the political support and the community adoption. However, there is opportunity in the context of a broader-based campaign for healthy living and incentives tied to healthy behaviors. A recent

report documents that one-third of the general population’s sugar consumption comes from soda consumption; this suggests a significant opportunity tied to reducing soda consumption and making real progress in obesity prevention through a population-based initiative.

## Vision for Implementation

Figure 6: Vision for Implementation



Source: Office of Population Health Improvement, DHMH, 2016

In moving forward with population health improvement activities that are coordinated with the All-Payer Model, the State endeavors to guide planning for population health improvement through an establishment of shared priorities, outcome measures and implementation. Based on data availability and community input, localities can determine the most critical health priorities and what strategies will be most effective to improve the health of their local populations and achieve greater health equity.

## Additional Information on Methodologies and Deployment

Further detail on the Population Health Improvement Plan is available via <https://mmcp.dhmd.maryland.gov/sim/Pages/Home.aspx>.

## Bibliography

- Access Health Spartanburg. (2015). 2015 Report to the Community. Retrieved from [http://www.accesshealthspartanburg.org/community\\_report\\_2015](http://www.accesshealthspartanburg.org/community_report_2015)
- Agency for Healthcare Research and Quality. (2016, September). National Healthcare Quality and Disparities Report: Chartbook on Effective Treatment. Retrieved from: <http://www.ahrq.gov/research/findings/nhqrdr/chartbooks/effectivetreatment/index.html>.
- Agency for Healthcare Research and Quality. *Physical Functional Health Status: Average Change in Patient Functional Status from Initial to Discharge Visit Among Patients Receiving Outpatient Rehabilitation Services*. Retrieved from <https://www.qualitymeasures.ahrq.gov/summaries/summary/28287/physical-functional-health-status-average-change-in-patient-functional-status-from-initial-to-discharge-visit-among-patients-receiving-outpatient-rehabilitation-services>
- Agency for Healthcare Research and Quality. (2016, June). Telehealth: Mapping the Evidence for Patient Outcomes From Systematic Reviews. Technical Brief Number 26. Retrieved from <https://www.effectivehealthcare.ahrq.gov/ehc/products/624/2254/telehealth-report-160630.pdf>
- Alper, J., & Baciu, A. (2015, January 6). *Financing Population Health Improvement: Workshop Summary. Quoting Kevin Barnett, Senior Investigator, Public Health Institute*. Washington, DC: National Academies Press.
- American Elder Care Research Organization (2015, May). *Kansas Medicaid (KanCare) HCBS Frail Elderly Waiver: Qualifications and Services*. Retrieved from: <https://www.payingforseniorcare.com/medicaid-waivers/ks-hcbs-frail-and-elderly.html>
- America's Health Insurance Plans. (2008). Innovations in Prevention, Wellness, and Risk Reduction.
- Arons, A. (2011, January). Childhood Obesity in Texas -The Costs, the Policies, and a Framework for the Future. Children's Hospital Association of Texas. Retrieved from <http://www.childhealthtx.org/pdfs/Childhood%20Obesity%20in%20Texas%20Report.pdf>
- Auerbach, J. (2016). The 3 Buckets of Prevention. *Journal of Public Health Management Practice* 22(3), 215-218.
- AWARE Recovery Care. (2016, June 8). *OPEN MINDS Strategy and Innovation Institute*. Presentation. Retrieved from: <http://strategy.openminds.com/years/2016/>
- Bachrach, D., Guyer, J., & Levin, A. (2016, July). Medicaid Coverage of Social Interventions: A Road Map for States. Milbank Memorial Fund. Retrieved from [http://www.milbank.org/uploads/documents/medicaid\\_coverage\\_of\\_social\\_interventions\\_a\\_road\\_map\\_for\\_states.pdf](http://www.milbank.org/uploads/documents/medicaid_coverage_of_social_interventions_a_road_map_for_states.pdf)

- Bahrapour, T. (2015, December 6). Doctors Prescribe Old-Fashioned House Calls When Treating the Old and Frail. *The Washington Post*. Retrieved from [https://www.washingtonpost.com/local/social-issues/doctors-prescribe-old-fashioned-house-calls-when-treating-the-old-and-frail/2015/12/06/e0b476fc-9aa2-11e5-8917-653b65c809eb\\_story.html](https://www.washingtonpost.com/local/social-issues/doctors-prescribe-old-fashioned-house-calls-when-treating-the-old-and-frail/2015/12/06/e0b476fc-9aa2-11e5-8917-653b65c809eb_story.html).
- Baltimore City Health Department. (2016, Winter). *White Paper, State of Health in Baltimore: Summary of Key Issues, Services and Policies*.
- Bamberger, J. D. & Dobbins, S. (2014, July). Long-Term Cost Effectiveness of Placing Homeless Seniors in Permanent Supportive Housing. Federal Reserve Bank of San Francisco. Retrieved from <http://www.frbsf.org/community-development/files/wp2014-01.pdf>
- Beacon Health Options. (2015, June). Confronting the Crisis of Opioid Addiction, White Paper. Retrieved from <http://beaconlens.com/wp-content/uploads/2015/11/Confronting-the-Crisis-of-Opioid-Addiction.pdf>
- Bergum A.H., Catlin B.B., Timberlake K. (2015, July). What Works? Strategies to Improve Rural Health. University of Wisconsin Population Health Institute. Retrieved from <https://uwphi.pophealth.wisc.edu/programs/match/healthiest-state/what-works-rural-report-july-2015.pdf>
- Blieweis, J. (2015, April 22). Health Literacy Program Expands in Worcester Schools. *Delmarva Now*. Retrieved from <http://www.delmarvanow.com/story/news/local/maryland/2015/04/22/worcester-health-literacy/26175779/>
- Blumenthal, D., Malphrus, E., & McGinnis, J. (2015). Vital signs: Core Metrics for Health and Health Care Progress. *National Academies Press*. Retrieved from <https://www.nap.edu/catalog/19402/vital-signs-core-metrics-for-health-and-health-care-progress>
- Bodenheimer, T. (2013). Strategies to Reduce Costs and Improve Care for High-Utilizing Medicaid Patients: Reflections on Pioneering Programs. *San Francisco: Center for Health Care Strategies, Inc*. Retrieved from [https://www.anthem.com/provider/noapplication/f1/s0/t0/pw\\_e211389.pdf](https://www.anthem.com/provider/noapplication/f1/s0/t0/pw_e211389.pdf)
- Boston, S., & DeMarco, V., (2016, February 15). Maryland Faith Community Health Network Aims to Connect Hospitals and Places of Worship to Improve the Health of Marylanders. *Lifebridge Health*. Retrieved from <http://lifebridgehealth.org/Main/PressReleases/Maryland-Faith-Community-Health-Network-Aims-to-Co-540.aspx>
- Bradley, E., Canavan, M., Rogan, E., Talbert-Slagle, K., Ndumele, C., Taylor, L. & Curry, L. (2016, May). Variation in Health Outcome: The Role of Spending in Social Services, Public Health and Health Care.” *Health Affairs* 35:(5). Retrieved from <https://www.nap.edu/catalog/19402/vital-signs-core-metrics-for-health-and-health-care-progress>
- Bureau of Community Health and Prevention. (2015, January ). The Massachusetts Prevention and Wellness Trust Fund-2014 Legislative Report. Massachusetts Department of Public Health. Retrieved from <http://www.mass.gov/eohhs/docs/dph/com-health/prev-wellness-advisory-board/annual-report-2014.pdf>



- Burke, C. (2014, October 28). NYS Health Initiatives to Improve Population Health. Presentation. New York Department of Health. Retrieved from <http://nyshealthfoundation.org/uploads/general/pop-health-summit-2014-burke-slides.pdf>
- California Department of Health Services. (2015, August 14). *Federal Government Approves New Model of Treatment for Drug Medi-Cal Program*. Retrieved from <http://www.dhcs.ca.gov/formsandpubs/publications/opa/Documents/15-02%20DMC%20ODS%20Waiver%208-14-15.pdf>
- Campbell, C. (2016, March 16). Baltimore Approves Bike Rental Program to Launch in Fall with 500 Bicycles. *Baltimore Sun*. Retrieved from <http://www.baltimoresun.com/news/maryland/baltimore-city/bs-md-ci-bike-share-approved-20160316-story.html>
- Cantor, J., Mikkelsen, L., Simons, B., & Waters, R. (2013, January). How Can We Pay For a Healthy Population? Innovative New Ways to Redirect Funds to Community Prevention. Prevention Institute. Retrieved from <https://www.preventioninstitute.org/publications/how-can-we-pay-healthy-population-innovative-new-ways-redirect-funds-community>
- CareFirst BlueCross BlueShield. (2015, June 30). *Quality Remains Strong as Cost Increases Slow Dramatically for Members in Patient-Centered Medical Home Program*. Retrieved from <https://member.carefirst.com/employer/news/employer-news/2015/quality-remains-strong-as-cost-increases-for-members-in-patient-centered-medical-home-program-slow-dramatically.page>
- Centers for Disease Control and Prevention. (2015). Compendium of Effective Falls Interventions: What Works for Community-Dwelling Older Adults,” 3d Edition, Division of Unintentional Injury Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Retrieved from <http://www.cdc.gov/homeandrecreationalsafety/falls/compendium.html>
- Centers For Disease Control and Prevention,. Case Study: The Effect of Expanding Cessation Coverage – the Massachusetts Medicaid Cessation Benefit. Washington, DC: US Department of Health and Human Services.
- Center for Supportive Housing. (2014, July). *Housing is the Best Medicine: Supportive Housing and the Social Determinants of Health*. Retrieved from [www.org/wo-content/uploads/2014/07/SocialDeterminantsofHealth\\_2014.pdf](http://www.org/wo-content/uploads/2014/07/SocialDeterminantsofHealth_2014.pdf).
- ChangeLab Solutions. (2014, June 2). ChangeLab Solutions Promotes Strategies for Reducing SSB Consumption. Retrieved from <http://www.changelabsolutions.org/news/reducing-ssb>
- Clary, A. (2016, March 29). State Strategies to Improve Health Through Housing Services. National Academy for State Health Policy. Retrieved from <http://www.nashp.org/state-strategies-to-improve-health-through-housing-services/>
- CMS. (2015). 2015-06-18 - Centers for Medicare & Medicaid Services. Retrieved 15 December 2015. Retrieved from <https://www.cms.gov/newsroom/mediareleasedatabase/press-releases/2015-press-releases-items/2015-06-18.html>

- CMS. (2015). 2015-09-29 - Centers for Medicare & Medicaid Services. Retrieved 15 December 2015. Retrieved from <https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2015-Fact-sheets-items/2015-09-29.html>
- CMS. *Dual Eligible Special Needs Plans (D-SNP)*. Retrieved from <https://www.cms.gov/Medicare/Health-Plans/SpecialNeedsPlans/DualEligibleSNP.html>
- CMS. *Quality Measures, Reporting and Performance Standards*. Retrieved from <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Quality-Measures-Standards.html>
- Cohen, D. & Briggs, R. (2016, June 29). "Do Pediatricians Have a Role in Addressing Maternal Depression? New Medicaid Guidance Shows the Way," HealthAffairs Blog. Retrieved from <http://healthaffairs.org/blog/2016/06/29/do-pediatricians-have-a-role-in-addressing-maternal-depression-new-medicaid-guidance-shows-the-way/>
- Cohen, L., & Iton, A. (2014). Closing the Loop: Why We Need to Invest-and Reinvest- in Prevention. The California Endowment. Retrieved from <http://tcenews.calendow.org/blog/closing-the-loop-why-we-need-to-investand-reinvestin-prevention>
- Colorado Association for School-Based Health Care. (2011). Colorado's investment in School-Based Health Centers. Retrieved from <http://www.casbhc.org/Publications/Policy%20Briefs/Colorado's%20Investment%20in%20SBHCs.pdf>
- Corporation for Supportive Housing. (2014). *Briefing: Maryland 115 Housing Supports Waiver*.
- Crawford, M. & Houston, R. (2015, February). State Payment and Financing Models to Promote Health and Social Service Integration. Center for Health Care Strategies, Inc. Retrieved from [http://www.chcs.org/media/Medicaid\\_-Soc-Service-Financing\\_022515\\_2\\_Final.pdf](http://www.chcs.org/media/Medicaid_-Soc-Service-Financing_022515_2_Final.pdf)
- Davis, K. (2015, July 14). To Lower The Cost Of Health Care, Invest In Social Services. Health Affairs Blog. Retrieved from <https://www.pcpcc.org/2015/07/14/lower-cost-health-care-invest-social-services>
- De Jonge, K. (2015, August 11). Back to the Future: Making House Calls for Better Care, Reduced Costs. Health & Human Services Blog. Retrieved from <http://www.hhs.gov/blog/2015/08/11/making-house-calls-better-care-reduced-costs.html>
- Dobson, L. (2014). Community Care of North Carolina. Retrieved from <https://www.nmlegis.gov/handouts/LHHS%20101012%20Item%200%20L.%20Allen%20Dobson,%20JR.%20MD,%20Community%20Care%20of%20North%20Carolina.pdf>
- Duke, E. (2012). Investing in What Works for America's Communities. Foreward: Building Sustainable Communities. *San Francisco: Federal Reserve Bank & Low income Investment Fund*. Retrieved from <http://www.whatworksforamerica.org/the-book>
- Farley, T. (2013, December 3). Take Care New York: A Strategy for Population-Based Prevention. Retrieved from [https://www.health.ny.gov/events/population\\_health\\_summit/docs/public\\_health\\_sector.pdf](https://www.health.ny.gov/events/population_health_summit/docs/public_health_sector.pdf)

- Fish, D., (2015, September 24). *Prevention Agenda and DSRIP*. New York Prevention Agenda Update, New York Department of Health. Retrieved from [https://www.health.ny.gov/facilities/public\\_health\\_and\\_health\\_planning\\_council/meetings/2015-09-24/docs/ad\\_hoc\\_committee\\_slides.pdf](https://www.health.ny.gov/facilities/public_health_and_health_planning_council/meetings/2015-09-24/docs/ad_hoc_committee_slides.pdf)
- Garrett, K. (2015, January). Bridging Health Care and Population Health: Payment and Financing Models. New York Academy of Medicine. Retrieved from <http://nyshealthfoundation.org/uploads/resources/bridging-health-care-and-population-health-nyam-jan-2015.pdf>
- Galea, S. & Annas, G. (2016, February 16). Aspirations and Strategies for Public Health. *JAMA: Journal of the American Medical Association*, 315(7), 655-656. Retrieved from: <http://jama.jamanetwork.com/article.aspx?articleid=2486470>
- George, T. & Bai, B. (2015, May 21). The Weak Housing Market Recovery in Baltimore Has Hurt African Americans the Most. The Urban institute, Urban Wire. Retrieved from <http://www.urban.org/urban-wire/weak-housing-market-recovery-baltimore-has-hurt-african-americans-most>
- Gordon, D. (2015). Telemedicine: Using Remote Monitoring to Reduce Hospital Readmissions. GW Public Health. Retrieved from <https://mha.gwu.edu/blog/telemedicine-reduce-hospital-readmissions/>
- Guo, JJ, Jang, R., Keller, KN, McCracken, AL, Pan, W., & Cluxton, RJ. (2005, October). Impact of School-Based Health Centers on Children with Asthma. *Journal of Adolescent Health* 37(4): 266-274. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/16182136>
- Health and Human Services. (2015). About the Division of Prevention and Wellness. Retrieved from <http://www.mass.gov/eohhs/gov/departments/dph/programs/community-health/chronic-disease/about-the-division-of-prevention-and-wellness.html>
- Health Policy Institute of Ohio. (2015, September 1). *Wellness Trust, Beyond Medical Care Fact Sheet*. Retrieved from: [http://www.healthpolicyohio.org/wp-content/uploads/2015/09/Beyond\\_WellnessTrustsFactSheet\\_Final.pdf](http://www.healthpolicyohio.org/wp-content/uploads/2015/09/Beyond_WellnessTrustsFactSheet_Final.pdf)
- Health Resources in Action. (2014, January 31). Universal Health Insurance Access Efforts in Massachusetts: A Case Study: Lessons Learned for Public Health Systems Across the U.S. Retrieved from [https://nnphi.org/wp-content/uploads/2015/08/UniversalHealthIns\\_CaseStudy\\_FINAL.pdf](https://nnphi.org/wp-content/uploads/2015/08/UniversalHealthIns_CaseStudy_FINAL.pdf)
- HSCRC. (2016, February). Executive Director's Report. Retrieved from <http://www.hsrc.state.md.us/documents/commission-meeting/2016/02-10/HSCRC-post-meeting/2016/02-10/HSCRC-Post-Meeting-Packet-%202016-02-10.pdf>
- Health Services Cost Review Commission (2016, May 11). Staff Report: Maryland Statewide Health Information Exchange, The Chesapeake Regional Information System for our Patients: FY2017 Funding to Support HIE Operations and CRISP Reporting Services. *Post-Meeting Packet – Health Services Cost Review Commission*. Retrieved from: [www.hsrc.state.md.us/.../2016/05-11/HSCRC-Post-Meeting-Packet-2016-05-11.pdf](http://www.hsrc.state.md.us/.../2016/05-11/HSCRC-Post-Meeting-Packet-2016-05-11.pdf)

- Healthy Baltimore 2015. (2016, May). *Interim Status Report*. Retrieved from [http://health.baltimorecity.gov/sites/default/files/HealthyBaltimore2015\\_May2016Update\\_web.pdf](http://health.baltimorecity.gov/sites/default/files/HealthyBaltimore2015_May2016Update_web.pdf)
- Healthy St Mary's County 2020. Retrieved from <http://healthystmarys.com/wp-content/uploads/2016/03/HealthyStMarys2020.pdf>
- Healthy Baltimore 2015. (2016, May). *Interim Status Report*. Retrieved from: [http://health.baltimorecity.gov/sites/default/files/HealthyBaltimore2015\\_May2016Update\\_web.pdf](http://health.baltimorecity.gov/sites/default/files/HealthyBaltimore2015_May2016Update_web.pdf)
- Hennepin County. (2015). Hennepin Health's 2014 Reinvestment Initiatives. Retrieved from <https://content.govdelivery.com/accounts/MNHENNE/bulletins/9e701c>
- Hennepin Health. (2015, January 30). National Health Policy Forum. Retrieved from [https://www.nhpf.org/uploads/Handouts/Owen-slides\\_01-30-15.pdf](https://www.nhpf.org/uploads/Handouts/Owen-slides_01-30-15.pdf)
- Hennepin Health (2011). A Social Disparities Approach to Health & Health Care. Retrieved from <https://stateinnovation.org/node/6438>
- Hester, J., & Stange, P. (2014, March 6). A Sustainable Financial Model for Community Health Systems. National Academy of Sciences. Retrieved from <https://nam.edu/perspectives-2014-a-sustainable-financial-model-for-community-health-systems/>
- Hester, J., Stange, P., Seeff, L., Davis, J., & Craft, C. (2015, February 11). Toward Sustainable Improvements in Population Health: Overview of Community Integration Structures and Emerging Innovations in Financing. Atlanta, GA: CDC Health Policy Series, No. 2. Retrieved from: <https://www.cdc.gov/policy/docs/financepaper.pdf>
- Hester, J., Auerbach, J., Chang, D., Magnan, S., & Monroe, J. (2015, April 16). Opportunity Knocks Again for Population Health: Round Two in State Innovation Models. Washington, DC: National Academy of Sciences. Retrieved from <https://nam.edu/wp-content/uploads/2015/06/SIMsRound21.pdf>
- Institute for Health Technology Transformation. (2012). Giving Congregations the Tools to Track Health Together. Retrieved from [http://ihealthtran.com/pdf/Community\\_Dashboard\\_iHT2.pdf](http://ihealthtran.com/pdf/Community_Dashboard_iHT2.pdf)
- Institute for Population Health Improvement. (2016). University of California, Davis Health System. Retrieved from: <https://www.ucdmc.ucdavis.edu/iphi/>
- Institute on Urban Health Research and Practice. (2013). The Massachusetts Prevention and Wellness Trust. Northeastern University. Retrieved from <http://www.northeastern.edu/iuhrp/wp-content/uploads/2013/12/PreventionTrustFinalReport.pdf>
- Kellermann, A., Vaiana, M., Hussey, P., Chari, R., Lowsky, D., & Mulcahy, A. (2012). Flattening the Trajectory of Health Care Spending: Insights from RAND Health Research. Santa Monica, CA: RAND Corporation. Retrieved from [http://www.rand.org/pubs/research\\_briefs/RB9690z1.html](http://www.rand.org/pubs/research_briefs/RB9690z1.html)

- Kindig, D. (2014, April). Improving Population Health: Ideas and Action. University of Wisconsin Population Health Institute. Retrieved from <https://uwphi.pophealth.wisc.edu/publications/other/blog-collection-final-2014-04-05.pdf>
- Kindig, D. (2010, June 7). *Obstacles to Population Health Policy: Is Anyone Accountable? Improving Population Health, Policy. Practice. Research.* Retrieved from: <http://www.improvingpopulationhealth.org/blog/2010/06/obstacles-to-population-health-policy-is-anyone-accountable.html>
- Kindig, D. (2014, October 28, 2014). Paying for Population Health Improvement. Presentation, NYSHF Population Health Summit. Retrieved from <http://nyshealthfoundation.org/uploads/general/pop-health-summit-2014-kindig-slides.pdf>
- Kindig, D., & Isham, G. (2014, Summer). Population Health Improvement: A Community Health Business Model That Engages Partners in All Sectors. *Frontiers of Health Services Management*, 30(4). 3-20. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/25671991>
- Kindig, D. & Stoddart, G. (2003, March). What Is Population Health? *American Journal of Public Health* 93(3). 380-383. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1447747/>
- Koh, H. (2016, February 11). The importance Of Promoting Tobacco Cessation Services For Medicaid Beneficiaries. Health Affairs Blog. Retrieved from <http://healthaffairs.org/blog/2016/02/11/the-importance-of-promoting-tobacco-cessation-services-for-medicaid-beneficiaries/>
- Kresge Foundation. (2014, July 9). Kresge Invests \$4.5M in Effort to Capture and Share Health Innovations that Shift Focus Upstream from Care to Health. Retrieved from <http://kresge.org/news/kresge-invests-45m-effort-capture-and-share-health-innovations-shift-focus-upstream-care-health>
- Lawton, E., & Sandel, M. (2015, July 8). What's Law Got to Do With It? How Medical-Legal Partnerships Reduce Barriers to Health. Robert Wood Johnson Foundation. Retrieved from [http://www.rwjf.org/en/culture-of-health/2015/07/what\\_s\\_law\\_got\\_todo.html](http://www.rwjf.org/en/culture-of-health/2015/07/what_s_law_got_todo.html)
- Lutes, M., & Wilson, T. (2014, June 2). Population Health Management: New Perspectives on a Familiar Concept. EBG Advisors.
- Maryland Department of Health and Mental Hygiene. (2015, June). Drug-and Alcohol-Related Intoxication Deaths in Maryland, 2015. Retrieved from [http://bha.dhmmh.maryland.gov/OVERDOSE\\_PREVENTION/Documents/2015%20Annual%20Report\\_final.pdf](http://bha.dhmmh.maryland.gov/OVERDOSE_PREVENTION/Documents/2015%20Annual%20Report_final.pdf)
- Maryland Department of Transportation (2016, February). Maryland Strategic Highway Safety Plan, 2016-2020. Retrieved from [http://www.mva.maryland.gov/\\_resources/docs/MarylandSHSP\\_2016-2020-Final.pdf](http://www.mva.maryland.gov/_resources/docs/MarylandSHSP_2016-2020-Final.pdf)
- Maryland Health Benefits Exchange (2016, May 16). Population Eligible for Maryland Health Connection Coverage Trimmed by 40 Percent in Three Years. Retrieved from [http://www.marylandhbe.com/wp-content/uploads/2016/01/05162016\\_SHADACEstimates.pdf](http://www.marylandhbe.com/wp-content/uploads/2016/01/05162016_SHADACEstimates.pdf)

- Maryland State Health Improvement Process (SHIP) measures. Retrieved from <http://dhmh.maryland.gov/ship/Pages/home.aspx>
- Massey, W., & Dressner, M. (2016, August 4). Advocates Rally for Baltimore Safe Streets Program After Funding Cut. *Baltimore Sun*. Retrieved from <http://www.baltimoresun.com/news/maryland/baltimore-city/bs-md-ci-safe-streets-funding-rally-20160804-story.html>
- Mattessich, P., & Rausch, E. (2013, June 19). Collaboration to Build Healthier Communities. Wilder Research, Federal Reserve Bank of Minnesota. Robert Wood Johnson Foundation. Retrieved from <http://www.rwjf.org/en/library/research/2013/06/collaboration-to-build-healthier-communities.html>
- McCarthy, D., Radley, D., & Hayes, S. (2015, December) Aiming Higher: Scorecard on State Health System Performance 4th ed. The Commonwealth Fund. Retrieved from <http://www.commonwealthfund.org/publications/fund-reports/2015/dec/aiming-higher-2015>
- McCluskey, P. D., (2014, May 31) Paramedics Branch into Home Care. *Boston Globe*. Retrieved from <https://www.bostonglobe.com/business/2014/05/30/paramedics-branch-into-home-care/WIBIbjRuBx6mQCe0Nb3c3K/story.html>
- McGinnis, T., Crawford, M., & Somers, S. (2014). A State Policy Framework for Integrating Health and Social Services. Commonwealth Fund. Retrieved from: [http://www.commonwealthfund.org/~media/files/publications/issue-brief/2014/jul/1757\\_mcginnis\\_state\\_policy\\_framework\\_ib.pdf](http://www.commonwealthfund.org/~media/files/publications/issue-brief/2014/jul/1757_mcginnis_state_policy_framework_ib.pdf)
- MedStar Health. Community Health Needs Assessment 2015 for St. Mary's County. Retrieved from [http://ct1.medstarhealth.org/content/uploads/sites16/2014/08/MedStar\\_CHNA\\_2015\\_FINAL.pdf](http://ct1.medstarhealth.org/content/uploads/sites16/2014/08/MedStar_CHNA_2015_FINAL.pdf)
- Menon, D., & Wolf, D. (2015, October 29-30) Enhancing Access of Underserved Populations to Pediatric Specialty Care through Telemedicine. 2015 Rural Health Conference. Retrieved from [http://www.mdruralhealth.org/wp-content/uploads/2015/12/Menon.Wolf\\_.pdf](http://www.mdruralhealth.org/wp-content/uploads/2015/12/Menon.Wolf_.pdf)
- MHA. (2016). *Maryland Waiver Performance Dashboard*. Retrieved from <http://www.mhaonline.org/transforming-health-care/tracking-our-all-payer-experiment/waiver-dashboard>
- Moses, K. & Davis, R. (2015, July 22). Housing is a Prescription for Better Health. Health Affairs Blog. Retrieved from [Healthaffairs.org/blog/2015/07/22/housing-is-a-prescription-for-better-health/](http://Healthaffairs.org/blog/2015/07/22/housing-is-a-prescription-for-better-health/)
- Nardone, M., Cho, R. & Moses, K. (2012, June). Medicaid-Financed Services in Supportive Housing for High-Need Homeless Beneficiaries: The Business Case. Center for Health Care Strategies, Inc., Policy Brief. Retrieved from [http://www.csh.org/wp-content/uploads/2012/06/SH-Medicaid-Bz-Case\\_Final.pdf](http://www.csh.org/wp-content/uploads/2012/06/SH-Medicaid-Bz-Case_Final.pdf).
- National Academies Press (2015) *Collaboration Between Health Care and Public Health: Workshop in Brief*. Retrieved from <https://www.nap.edu/catalog/21687/collaboration-between-health-care-and-public-health-workshop-in-brief>

- National Council on Aging. (2015, June 2). Highest Tier Evidence-Based Health Promotion/Disease Prevention Programs. Retrieved from <https://www.ncoa.org/wp-content/uploads/Title-IIID-Highest-Tier-Evidence-FINAL.pdf>
- New Strategies for a New Era in Population Health. (2015, August). Health Leaders Magazine. Retrieved from <http://www.healthleadersmedia.com/whitepaper/new-strategies-new-era-population-health#>
- New York Academy of Medicine. (2013). A Compendium of Proven Community-Based Prevention Programs Retrieved from [http://healthyamericans.org/assets/files/Compendium\\_Report\\_1016\\_1131.pdf](http://healthyamericans.org/assets/files/Compendium_Report_1016_1131.pdf)
- Nice Ride Minnesota. (2015, May 7). *Nice Ride: Five-Year Assessment and Strategic Plan*. Retrieved from [https://www.niceridemn.org/\\_asset/dvhz30/Nice-Ride-Five-Year-Assessment-060415.pdf](https://www.niceridemn.org/_asset/dvhz30/Nice-Ride-Five-Year-Assessment-060415.pdf)
- Mandros, A. (2015, May 29). For Supportive Housing, Creativity Required. Open Minds, Retrieved from <https://www.openminds.com/market-intelligence/executive-briefings/supportive-housing-creativity-required/>
- National Association of Psychiatric Health Systems (2014) Population Health and Integration: Shaping the Future of Treatment for Mental and Addictive Disorders. NAPHS Leadership Forum. Retrieved from <https://www.naphs.org/resourcemanager/handlerresource.aspx?id=827>
- Oregon Health Authority. (2015) *CCO Metrics Performance Report*. Retrieved from <https://www.oregon.gov/oha/Metrics/Pages/HST-Reports.aspx>
- Oregon Health Authority. (2014). *Oregon's Health Transformation Final Report*. Retrieved from <https://www.oregon.gov/oha/Metrics/Documents/2014%20Final%20Report%20-%20June%202015.pdf>
- Oregon Health Authority, *Office of Health Analytics*. Retrieved from <http://www.oregon.gov/oha/analytics/Pages/Child-Family-Well-Being-Measures>
- Oregon Health Authority. (2016). Oregon School-Based Health Centers: Status Update. *Oregon Health Authority, Public Health Division*. Retrieved from [https://public.health.oregon.gov/HealthyPeopleFamilies/Youth/HealthSchool/SchoolBasedHealthCenters/Documents/SBHC\\_\\_Pubs/2016\\_SBHC-Status-Update.pdf](https://public.health.oregon.gov/HealthyPeopleFamilies/Youth/HealthSchool/SchoolBasedHealthCenters/Documents/SBHC__Pubs/2016_SBHC-Status-Update.pdf)
- O'Toole, T. & Kane, V. (2014, March). Return on Investment Analysis and Modeling. VA National Center on Homelessness Among Veterans, *U.S. Department of Veterans Affairs*. Retrieved from <http://www.va.gov/homeless/nchav/docs/Return%20on%20Investment%20Analysis%20and%20Modeling%20White%20Paper.pdf>
- Parsons, A. (2016, April 6). *Montefiore's Population Health Programs and Strategies*. Presentation, Maryland Population Health Summit.

- Patnode, C., Henderson, J., Thompson, J., Senger, C., Fortmann, S., & Whitlock, E. (2015, September 22). Evidence Summary: Tobacco Smoking Cessation in Adults, Including Pregnant Women: Behavioral and Pharmacotherapy Interventions. U.S. Preventive Services Task Force. Retrieved from <http://www.uspreventiveservicestaskforce.org/Page/Document/behavioral-counseling-and-pharmacotherapy-interventions-for-/tobacco-use-in-adults-and-pregnant-women-counseling-and-interventions1>
- Paying for Senior Care. (2016, February). Oregon's Aged and Physically Disabled Medicaid Waiver. Retrieved from <https://www.payingforseniorcare.com/medicaid-waivers/or-aged-and-physically-disabled.html>
- Plaza, C., Arons, A., Rosenthal, J., & Heider, F. (2014, April). Financing Prevention: How States are Balancing Delivery System & Public Health Roles. *ChangeLab Solutions*. Retrieved from <http://www.changelabsolutions.org/financing-prevention>
- Pollitz, L. & Rae, M. (2016, May 19). Workplace Wellness Programs, Characteristics and Requirements. *Kaiser Family Foundation*. Retrieved from <http://kff.org/private-insurance/issue-brief/workplace-wellness-programs-characteristics-and-requirements/>
- Prybil, L., Jarris, P., & Montero, J. (2015, November 3). A Perspective on Public - Private Collaboration in the Health Sector. *National Academy of Medicine*. Retrieved from <https://nam.edu/a-perspective-on-public-private-collaboration-in-the-health-sector/>
- Prybil, L., Scutchfield, F., Killian, R., Kelly, A., Mays, G., & Carman, A. et al. (2014). *Improving Community Health through Hospital - Public Health Collaboration*. Lexington, KY: Commonwealth Center for Governance Studies. 1-105.
- Radley, D., McCarthy, D., & Hayes, S. (2016). Rising to the Challenge, The Commonwealth Fund Scorecard on Local Health System Performance. *The Commonwealth Fund*. Retrieved from <http://www.commonwealthfund.org/interactives/2016/jul/local-scorecard/>
- Rausch, E. (2014, April 1). CDFIs Emerge as Key Partners in Improving Community Health. Community Dividend. *Federal Reserve Bank of Minneapolis*. Retrieved from <https://www.minneapolisfed.org/publications/community-dividend/cdfis-emerge-as-key-partners-in-improving-community-health>
- Regenstein, M., Teitelbaum, J., Sharac, J., & Phyu, E. (2015, February). Medical-Legal Partnerships and Health Centers: Addressing Patients' Health-Harming Civil Legal Needs as Part of Primary Care. *National Center for Medical-Legal Partnership*. Retrieved from <http://medical-legalpartnership.org/wp-content/uploads/2015/08/Medical-Legal-Partnership-and-Health-Centers.pdf>
- Richter, L. (2009, May 13). Prescription for Healthy Communities: Community Development Finance. Community Development Investment. *Federal Reserve Bank of San Francisco*. Retrieved from <http://www.frbsf.org/community-development/files/richter.pdf>
- Robert Wood Johnson Foundation. *County Health Rankings and Roadmaps*. Retrieved from <http://www.countyhealthrankings.org/>



- Robert Wood Johnson Foundation. (2012, September 26). What Works for Health: A New Resource for Community Leaders. *Culture of Health*. Retrieved from [http://www.rwjf.org/en/culture-of-health/2012/09/what\\_works\\_for\\_healt.html](http://www.rwjf.org/en/culture-of-health/2012/09/what_works_for_healt.html)
- Robert Wood Johnson Foundation. (2015, November 11). *Measuring What Matters: Introducing a New Action Framework*. *Culture of Health*. Retrieved from: [http://www.rwjf.org/en/culture-of-health/2015/11/measuring\\_what\\_matte.html](http://www.rwjf.org/en/culture-of-health/2015/11/measuring_what_matte.html)
- Rosenthal, S., Meara, A., & Hollingsworth, N. (2015). Improving Care Coordination and Strategies for Managing Greater Risk and Accountability. *Presentation, Montefiore Medical Center*.
- RTI International. (2014, November 4). *State Innovation Models (SIM) Initiative Evaluation*. Retrieved from [https://downloads.cms.gov/files/cmmti/SIM-Round1-ModelTest-FirstAnnualRpt\\_5\\_6\\_15.pdf](https://downloads.cms.gov/files/cmmti/SIM-Round1-ModelTest-FirstAnnualRpt_5_6_15.pdf)
- Salvation Army (2015, March 9) *Community Paramedics On Duty at Harbor Light*. Retrieved from <http://salvationarmynorth.org/?community-news=community-paramedics-on-duty-at-harbor-light>
- Schulz, R. (2015, June 23). A New Model for Private Sector Partnerships to Improve Economic Well-Being and Community Outcomes. *National Academy of Sciences*. Retrieved from <https://nam.edu/perspectives-2015-a-new-model-for-private-sector-partnerships-to-improve-economic-well-being-and-community-outcomes/>
- Silow-Carroll, S., Edwards, J., & Lashbrook, A. (2011, April). Reducing Hospital Readmissions: Lessons from Top-Performing Hospitals. *The Commonwealth Fund*. Retrieved from [http://www.commonwealthfund.org/~media/Files/Publications/Case%20Study/2011/Apr/1473\\_SilowCarroll\\_readmissions\\_synthesis\\_web\\_version.pdf](http://www.commonwealthfund.org/~media/Files/Publications/Case%20Study/2011/Apr/1473_SilowCarroll_readmissions_synthesis_web_version.pdf)
- Staterefor(u)m (2014, January). Population Health Components of State Innovation Model (SIM) Plans: Round 2 Model Testing States. Retrieved from <http://www.statecoverage.org/node/5302>
- Stoto, M., & Ryan Smith, C. (2015, April 9). Community Health Needs Assessments - Aligning the Interests of Public Health and the Health Care Delivery System to Improve Population Health. *Institute of Medicine of the National Academies*. Retrieved from <https://nam.edu/wp-content/uploads/2015/07/CHNAalignment.pdf>
- Taylor E., Lake T., Nysenbaum J., Peterson G., Meyers D. (2011, June). Coordinating Care in the Medical Neighborhood: Critical Components and Available Mechanisms. White Paper (Prepared by Mathematica Policy Research under Contract No. HHS290200900019I TO2). AHRQ Publication No. 11-0064. Rockville, MD: Agency for Healthcare Research and Quality.
- Taylor, L., Coyle, C., Ndumele, C., Rogan, E., Canavan, M., Curry, L., & Bradley, E. (2015, June 29). Leveraging the Social Determinants of Health: What Works? *Blue Cross Blue Shield of Massachusetts Foundation*. Retrieved from [http://bluecrossfoundation.org/sites/default/files/download/publication/Social\\_Equity\\_Report\\_Final.pdf](http://bluecrossfoundation.org/sites/default/files/download/publication/Social_Equity_Report_Final.pdf)

- Thomas, J., (2014, July 21). Veterans Administration is Leader in Telemental Housing. *National Psychologist*. Retrieved from <http://nationalpsychologist.com/2014/07/veterans-administration-is-leader-in-telemental-health/102562.html>
- Tipirmeni, M.D., R., Vickery, M.D., K., & Ehlinger, M.D., E. (2015, July/August). Accountable Communities for Health: Moving From Providing Accountable Care for Creating Health. *Annals of Family Medicine*, Vol. 13(4). Retrieved from <http://www.annfammed.org/content/13/4/367.full>
- Townley, C., & Yalowich, R. (2015, November). Improving Behavioral Health Access & Integration Using Telehealth & Teleconsultation: A Health Care System for the 21st Century. *National Academy for State Health Policy*. Retrieved from <http://www.nashp.org/wp-content/uploads/2015/11/Telemedicine.pdf>
- Union Hospital & Cecil County Health Department. *Cecil County's Community Health Needs Assessment, 2015-2016*. Retrieved from [https://www.uhcc.com/wp-content/uploads/2016/04/CHNA-Report\\_FY15-FY16\\_public-feedback-draft.pdf](https://www.uhcc.com/wp-content/uploads/2016/04/CHNA-Report_FY15-FY16_public-feedback-draft.pdf)
- United Health Foundation, America's Health Rankings. Retrieved from [www.americashealthranking.org](http://www.americashealthranking.org)
- UnitedHealth Group. (2014, October 7). *United Healthcare provides \$5.1 Million to Build Affordable-Housing Community in Boston's Jamaica Plain Neighborhood for People Struggling with Homelessness*. Retrieved from <https://www.uhc.com/news-room/2014-news-release-archive/affordable-housing-in-boston>
- Vitality Institute, *Health Metrics Reporting*. Retrieved from <http://thevitalityinstitute.org/projects/health-metrics-reporting/>
- Vitality Institute. (2014, June). *Investing in Prevention: A National Imperative - Our Pledges & Calls-to-Action*. Retrieved from [http://thevitalityinstitute.org/site/wp-content/uploads/2014/06/Vitality\\_Recommendations2014.pdf](http://thevitalityinstitute.org/site/wp-content/uploads/2014/06/Vitality_Recommendations2014.pdf)
- Webber, MP., Carpinello, K., Oruwariye, T., Lo, Y., Burton, W., & Appel, D. (2003). Burden of Asthma in Inner-city Elementary Schoolchildren. *Pediatric and Adolescent Medicine* 157: 125-129. Retrieved from [http://www.attendanceworks.org/wordpress/wp-content/uploads/2011/10/Burden-of-Asthma\\_Do-SBHCs-Make-Difference\\_Webber-et-al\\_Arch-Ped-Adol-Med\\_2003.pdf](http://www.attendanceworks.org/wordpress/wp-content/uploads/2011/10/Burden-of-Asthma_Do-SBHCs-Make-Difference_Webber-et-al_Arch-Ped-Adol-Med_2003.pdf)
- Webster, D., Mendel Whitehill, J., Vernick, J. & Parker, E., (2012, January 11). *Evaluation of Baltimore's Safe Streets Program*. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health, Center for the Prevention of Youth Violence. Retrieved from <http://www.rwjf.org/content/dam/web-assets/2012/01/evaluation-of-baltimore-s-safe-streets-program>
- Wenger, Y. (2016, September 2). Affordable Housing Advocates Push for Trust Fund, Money to Fill It. *The Baltimore Sun*. Retrieved from <http://www.baltimoresun.com/news/maryland/baltimore-city/politics/bs-md-ci-housing-amendment-20160830-story.html>

Western Maryland Health System & Allegany County Health Department. (2013, December). *Allegany County Community Health Needs Assessment*. Retrieved from [http://www.alleganyhealthdept.com/alleganyhealthplanningcoalition/pdf/Community%20Health%20Needs%20Assessment%20FY14%20\(final\).pdf](http://www.alleganyhealthdept.com/alleganyhealthplanningcoalition/pdf/Community%20Health%20Needs%20Assessment%20FY14%20(final).pdf)

Worcester County, Maryland. *Community Health Improvement Plan (CHIP), 2012-2017*. Retrieved from <http://www.worcesterhealth.org/community-health-improvement-planning-chip>

Zimmerman, J., Campisteguy, M., Parks, L., & Richardson, J. (2011, December). *The School-Based Health Care Policy Program: Capstone Evaluation. Outcomes, Impact and Lessons Learned, 2004-2010*. Retrieved from <http://www.schoolbasedhealthcare.org/wp-content/uploads/2011/12/SBHCPP-Capstone-Evaluation-Report-2004-2010-Rev-Dec-2011-2.pdf>

## **Appendix D**

# **Maryland Population Health Measurement Deployment**

# Maryland Population Health Measurement Development

## December 2016

### Population Health Measures for Health Transformation

For the past year, under SIM, the State has been preparing for further alignment of its population health initiatives with the progression of the All Payer Model. The State believes it is vital to align all of its stakeholders in driving towards improvements in community and population health by both monitoring the health of its residents and then holding the health care delivery system increasingly accountable for indicators deemed appropriate. The process of developing a framework for population health in Maryland, through measure development in alignment with the All Payer Model Progression Plan is described forthwith.

The SIM Population Health Measures (i.e., “Measures”) project focuses on a small set of measures that address broad indicators of health, which include chronic disease, risk factors associated with chronic illness, and hospital utilization. What is unique about the State’s efforts to map out measures over the near, short, and long-term is that the measures are to be applied across entire population geographies or population sub-groups, instead of solely to a health care provider or health plan. The intention is to create accountability for an entire population’s health and is intended to promote partnerships, prevention, and public health.

### Project Purpose and Goals

It is within the context of the All Payer Model and broad health transformation that the State started this project. Maryland has been working with two broad goals:

- 1) Begin to identify and develop measures of population health that can be used to bring accountability to the health care delivery system that further the State’s transition to long-term improved health outcomes, health equity, and community level health. The focus is to capture health at the population level. As such, the project aligns with the direction of health care transformation under SIM and the All Payer Model.
- 2) Update the State’s current set of measures for population health to be more relevant and timely to the All Payer Model. This includes building on Maryland’s State Health Improvement Process (SHIP).

### Alignment with All Payer Model

The Population Health Measures project is fully aligned with the State’s Progression Plan, including the All Payer Model, Maryland Comprehensive Primary Care Model, and Medicaid and Medicare Duals Care Delivery project. The Measures project is a key component of promoting incentives in a uniform way at both the state and federal level. Maryland seeks to enhance a system of health that is focused on reducing the burden of chronic illness, addressing health risk factors, non-medical determinants of health, and improving health equity. The Measures initiative has compiled metrics through an

accounting of recent literature, including the Institute of Medicine's report entitled *Vital Signs: Core Metrics for Health and Health Care Progress* which guides standardization for measuring and improving health.

The Measures project will directly integrate into the State's All Payer Model Amendment. Negotiated over calendar year 2016 and recently executed with CMMI to align hospital and non-hospital provider incentives to encourage care redesign, population health is also featured in the Amendment. Appendix 7 of the Amendment calls for the State to submit a Population Health Plan to CMS by June 30, 2017. The Population Health Plan will describe a transformation to value-based payments for selected population health measures. This Plan will include:

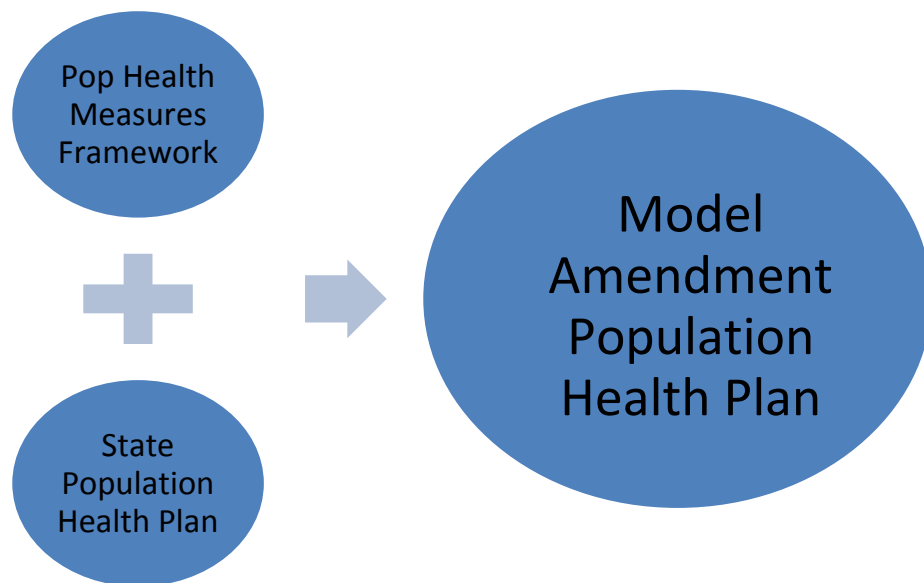
- Identifying measures that will be incorporated into the State's Appendix 7 measure reporting to CMS, as described in the All-Payer Model Agreement;
- Identifying at least three priority improvement measures for improving the State's population health;
- Proposing potential interventions to improve population health in these priority areas, including those that promote collaboration among State entities, public health agencies, and providers;
- Proposing outcomes-based measures that assess progress on population health improvement; and
- Describing pathways for transition to population-based, hospital payments.

The SIM Population Health Measures Project work will lay the foundation for the measures to be included in the All-Payer Amendment Population Health Plan. In the future, DHMH and HSCRC will work closely together to develop value-based payment methodologies to attach accountability to population health measures for Maryland hospitals. The population based payments are envisioned to be based on outcomes associated with the respective hospital's communities likely established by geographic attributions. This kind of transition will require hospitals to accelerate partnerships with community providers, community-based organizations, Local Health Departments (LHDs), consumers, social service organizations, and non-medical entities to improve the overall health of Maryland residents at the population level.

The State is concurrently working with CMS to develop a primary care model to improve population health. The proposal for the Maryland Comprehensive Primary Care Model will include care management infrastructure to aid practices in their transformation. The Care Transformation Organizations or CTOs will likely be similarly responsible for population health at a geographic level. Maryland will be designing the quality construct with CMS and its agency partners with the aim of ensuring alignment with the Amendment's Population Health Plan.

Moreover, the SIM State Population Health Plan: Planning for Population Health Improvement is establishing a framework for developing population health priorities and evidence-based interventions that will support the health care system in identifying sustainable investments for meeting these metrics. The findings from the State Population Health Improvement Plan will also be integrated into the Amendment Population Health Plan. The combination of these two population health activities into a future deliverable for CMS is illustrated in Figure 1.

**Figure 1: SIM Population Health Activities to All Payer Model Population Health Plan**



### Stakeholder Engagement

Developing and refining measures is an intensive process. The State obtained input from internal and external stakeholders through the help of its contractor. With support of consultants from Johns Hopkins Center for Population Health Information Technology (CPHIT), DHMH, and its chief agency partners HSCRC and Medicaid as well as CRISP, served as the subject matter experts and guided the development of the Population Health Measures Framework. Additionally, CPHIT developed the list of proposed measures based on (1) current feasibility and accessibility of metrics in Maryland and (2) the measures reflection of population/community health.

Since the early stages of this project, our federal partners have been critical in guiding us through the process of measure identification. CMMI has given us valuable feedback on areas of focus as it relates to our All-Payer Model work. Technical assistance leaders from the Centers for Disease Control and

Prevention (CDC) have provided numerous consultations and outlets to other groups forming around the field of population health measurement.

In addition to the preliminary proposed measures, DHMH received expert guidance and consultation from numerous external stakeholders. The State sought comment and feedback from external field leaders in Maryland. These individuals shared on the ground feedback regarding how measure definitions can be improved, data sourcing recommendations, progression, etc. CPHIT assisted the State in developing the construct and measure recommendations in consultation with these listed partners:

- DHMH: Office of Population Health Improvement (OPHI), HSCRC, Medicaid
- CMMI and CDC
- Consultant – JHU-Center for Population Health IT (CPHIT)
- Consumer advocates
- Hospitals
- Payers
- Local Health Departments
- State Health Information Exchange (CRISP)
- ACOs
- Providers

DHMH OPHI presented to the following workgroups:

- HSCRC Performance Measurement Workgroup
- Local Health Officers
- CRISP Reporting and Analytics Subcommittee
- Duals Care Delivery Workgroup
- Maryland Hospital Association

Paramount to the Population Measurement Project's success is the inclusion of the aforementioned stakeholders. The State will require continued engagement with stakeholders in 2017 as it further refines measure development.

## **Maryland's Core Measures of Population Health**

### **Population Health Measurement Framework**

Guiding the health system's progress from an episodic, clinical system to a holistic system, will require a sophisticated and dynamic portrait of all the factors associated with health. This initial framework strives to reflect the diversity of the State and the goals of the All-Payer Model, by providing a balance between broad population measures as well as narrower measures for vulnerable populations that require special attention.



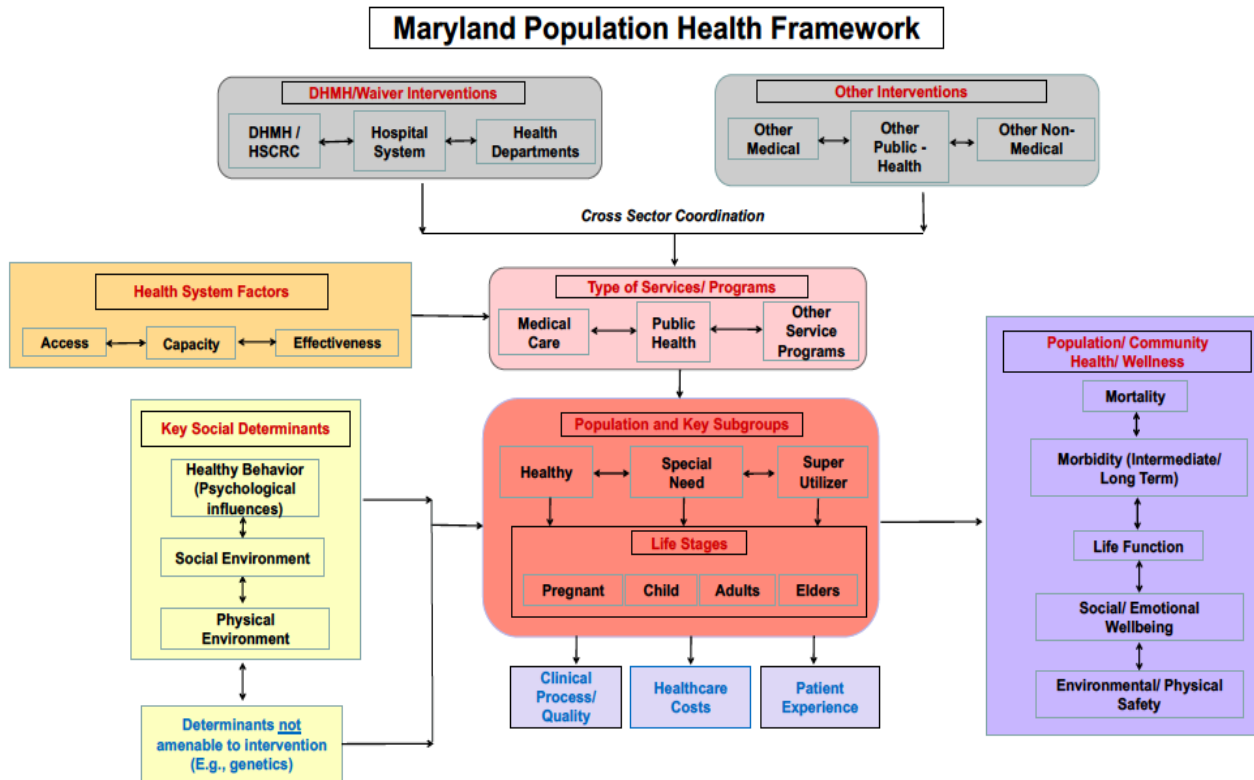
Early in the process, a population health framework was devised to guide thinking about measure diversity and inclusion. A framework for population health in Maryland was developed through a process utilizing peer-reviewed and expert-authored literature as well as scanned current population and public health measures in Maryland, other states, and local public health agencies. Maryland performed a semi-structured analysis to identify common themes using the following components:

- Identify existing population health frameworks and measures
- Extensive search of peer-reviewed and other expert-authored literature
  - Included an environmental scan of gray literature, those lacking formal peer review.
- Scan current population health and public health measures at
  - DHMH and similar state as well as local public health agencies
  - CMS
  - IOM
  - NQF (National Quality Forum)
  - IHI (Institute for Healthcare Improvement)
  - CDC
  - AHRQ (Agency for Healthcare Quality)
  - WHO (World Health Organization)

Parallel to considering existing measures, it was important to consider a framework of measures and data systems which looks to capture relevant community and population centric information to support and align with the success of both the All Payer Model as well as long-term health improvement. This included developing a comprehensive framework of population health measurement that builds on the current State Health Improvement Process (SHIP) framework, that is currently managed through the Office of Population Health Improvement.

The below proposed conceptual framework in Figure 2 consists of several domains and related subcategories. The framework is based on health system factors, determinants of health, population-based outcomes, and clinical outcomes. It is organized to track the process of health impacts, allowing for a balanced scorecard of measures to represent population and community wellness. The framework represents the continuum of life stages to recognize that health needs change across the life course. It also recognizes that clinical, non-clinical care, public health interventions, including infrastructure have effects on a variety of health outcome indicators. This conceptual framework serves as a foundation for identifying candidate measures for the Population Measures Project.

Figure 2: Maryland Population Health Framework



## Develop Candidate Population Measures

Utilizing the Maryland Population Health Framework, population health specific metrics that can measure the key areas of health outlined in the conceptual framework were explored. The framework identifies the types of health measures needed while allowing for the specificity of target populations to be illustrated in the accompanying metrics that derive from the measure categories. Categories of these measures include:

- Healthy System Factors
  - Access
  - Capacity
  - Effectiveness
- Population /Community Health Wellness
  - Mortality
  - Morbidity
  - Life Function
  - Social/Emotional Well-being

- Environmental/Physical Safety
- Key Social Determinants
  - Healthy Behaviors
  - Social Environment
  - Physical Environment

In developing criteria for the measures, already existing measures were prioritized while, at the same time, considering the context of driving towards population level measures that move away from a clinical-only sphere of influence. Additionally, for Maryland, the measures recommended are constructed with the specifications unique to the Maryland healthcare delivery system.

Given these considerations and measure categories, the types of measures proposed derived from the following buckets:

- Existing, validated measures (e.g., NQF, CMS) that until now have been used for a health plan/provider defined “denominator”
- Existing public health / community health measures used to date mainly for needs assessment at state or jurisdiction level
- Innovative measures (from IOM and others) addressing broader definitions of population health and newly expanded digital data sources

Given that measures look to drive towards population level measures, some unique features of the proposed measures include:

- Denominator/ “populations” defined more broadly: *Geographic or population-subgroup defined cohort without regard to provider or payer*

The measures use a geographic denominator beyond what is standard in the measure definition. Instead of a standard payer or clinical group that is treated by a provider, the measure specifications developed under the project expand the denominator to bring a broader geographic group to represent an entire geography. Data capture and sourcing will be critical to capture such a denominator, but the reconfiguration of these measures is to better capture population and community wellness in Maryland by more fully measuring it.

- Makes use of expanded data sources: *Electronic health records and expanded social/geo data sources*

The Maryland project focused on using sources of data that are more timely than traditional data sources for population health. While in the short term, we may have to

rely on survey data as we currently do, the intention is to move to more comprehensive data sources like electronic health records and local level data to determine population health. Long term, combining alternative data sources are key to measuring health.

- *Phased near-term/long-term deployment based on data system progression*

The project ultimately proposes a process for phasing measures from process to outcome measures. This is in large part determined by the availability of data sources and the ability of the data infrastructure in the State to support this work.

- Moves beyond the “clinical/medical” model to address “social/environmental” factors known to have larger impact on health.

The broader set of population measures laid out go beyond the traditional clinical measures. Maryland is focused on improving population health not just by improving clinical interventions, but by also addressing the risk factors and behaviors that drive outcomes. The State will begin to look at ways to capture and assess data through this work, and ultimately develop accountability and drive interventions.

## Selection Criteria for Population Health Measures

The selection criteria for the population health measures were developed over several months.

Maryland used six main criteria to select measures. These criteria guided selection in concert with the use of the Population Health Framework. The criteria are as follows:

- 1. Population/Community Focused:** measures that are relevant to one or more of the three population level perspectives known as the three CDC Population Health "buckets" (Auerbach J. The 3 buckets of prevention.<sup>1</sup>
- 2. Importance/Applicability:** measures that can be used as population based performance measures or clinical/public health intervention measures.
- 3. Balance:** measures that focus on a balanced interplay between public health interventions and clinical care. A scorecard will support the current Maryland All-Payer Model in its current state and its future innovations (e.g., as described in the state innovation model grant). Additionally, the scorecard looks to acknowledge measures that are relevant to small areas within larger jurisdiction scope and a range of temporality (i.e., short term and longer term outcomes).
- 4. Overall practicality / strategic value:** measurement areas not previously addressed by HSCRC/ DHMH or measures already identified, but where further work is needed. Additionally, measures that

---

<sup>1</sup> J Public Health Manag Pract. 2016;22(3):215-218).

could be accomplished with limited resources (i.e., not a new major community survey) and fill a gap in the conceptual framework.

**5. Scientific Evidence / Measures Attributes** - peer reviewed evidence that are important for health and welfare of populations.

**6. Data Feasibility / digital infrastructure** – uses timely data from data sources available in Maryland including health information exchange (HIE), electronic health records, administrative data, and other geographic data.

### **Proposed Set of Community and Population Measures**

Maryland began with a list of over 80 potential population health measures for consideration. Using the criteria discussed above and the conceptual framework to guide efforts, the State whittled down the list to 15 measures of community and population health. The measures cover a broad set of populations and health outcomes. While some are existing measures in the current SHIP measurement framework, most are derived from other measure sets to represent a balanced scorecard of population health for the State. See Table 1 below.

**Table 1: Mapping the Measures to the Population Health Framework**

Overview of Population Health Measurements																			
Target Population	Life Courses	Health System Factors			Key Social Determinants			Outcomes											
								Population/ Community Health/ Wellness					Clinical Process/ Quality	Healthcare Cost	Patient Experience				
		Access	Capacity	Effectiveness	Healthy Behavior	Social Environment	Physical Environment	Mortality	Morbidity		Life Function	Social/ Emotional Wellbeing				Environmental/ Physical Safety			
Intermediate	Long Term																		
Healthy	Across Target Populations & Life Courses	A1		A3	B1	B2	B3						C3						
	Pregnant																		
	Child/ Adolescent																		
	Adult																		
	Elderly																		
Special Needs	Across Target Populations & Life Courses		A2	A3 & A4				C1		C2									
	Pregnant																		
	Child/ Adolescent																		
	Adult																		
	Elderly																		
Super Utilizers	Across Target Populations & Life Courses																		
	Pregnant																		
	Child/ Adolescent																		
	Adult																		
	Elderly																		

The numeric codes in parenthesis below reflect the domain within our previous developed population health framework where each measure can generally be categorized. The graphic that follows also summarizes the placement of the recommended list of measures within our framework overview of the domains.

Below is the list of fifteen proposed measures. The codes noted to the right reflect the measure's placement with the conceptual domain(s) based on the measurement framework we developed.

- Code A: health system factors;
- Code B: key social determinants;
- Code C: population/ community health/ wellness.

The numbers present the subgroups of measures in each of the three main domains in the conceptual model. The initial six priority measures are bolded; the final four of outlined in blue shading detail in Table 2.

Additionally, in response to the Amendment's requirements for at least three priority measures, the State began working through a subset of focused measures. The State initially identified 6 measures to explore for feasibility of electronic medical record capture in the near to mid-term for population health accountability. Given the constraints of the SIM design period and data assessment rigor required, the initial set of 6 was further narrowed to 4 measures. These 4 measures represent what the State believes

are the broadest and most pressing areas of health outcomes that are directly related to the Progression Plan's focus on Medicare, dual eligibles, advanced primary care, and improvement on total cost of care and quality. The 4 measures selected are highlighted below in Table 2.

**Table 2: Maryland Measures of Population Health including Priority Measures**

1. Diabetes-related emergency department visits for community/population (A1/A2)
2. Asthma-related emergency department visits for community (A1/A2)
<b>3. Body Mass Index (BMI) screening and follow-up for community/ population (A3/ C2/PQ) (PQ= process quality)</b>
<b>4. Screening for high blood pressure and follow-up for community/population (A3/ /C2 /PQ)</b>
5. Food – nutrition; fruit and vegetable consumption for population (B1)
<b>6. Counseling on Physical Activity in the Population (B1)</b>
<b>7. Current adult smoking within population (B1)</b>
8. Median household income within population (B2)
9. Levels of housing affordability and availability (B2/B3)
10. Age-adjusted mortality rate from heart disease for population (C1)
11. Addiction-related emergency department visits (A1/C2)
<b>12. Falls; Fall-related injury rate (A4/B3/C1/C2/C3)</b>
13. Social connections and isolation (B2)
14. Functional Outcome Assessment (B1/C2)
<b>15. Self-Reported Health Status (C2)</b>

## Measure Specifications

In the spirit of creating broad measures of population health, measure specifications were customized for each of the six priority measures to calculate for various population denominators. As mentioned above several of the selected measures are well-established measures for the healthcare system. They are well defined to evaluate the health of those already receiving healthcare services. This information was drawn mainly from existing quality metrics for population health; mainly developed for accountable providers such as accountable care organizations, health maintenance organizations, and patient-centered medical homes. Measures were then converted to cross-community measures in terms of denominator definitions and data linkage, for example, to address those in a specific geographic area. Additionally, the data sources required of these measures within a single organization will need to be expanded across interoperable data sources such as those maintained by CRISP or the HSCRC to be effectively retrievable and useable.

To expand the definition of the measures and to shift measures for evaluating the healthcare system to evaluating the health status of populations in different geographic areas, the project defined the denominator of the measures as those;

- Residing in a specific geographic area such as a jurisdiction or neighborhood;

- Cared for or treated by a specific provider/health plan (i.e., attribution would need be defined such as majority of care from a health system, enrolled with a primary care physician, insured by Medicaid) or,
- Member of a certain sub group (e.g., selected age, gender, race cohorts, socioeconomic group)

## Data Infrastructure and Feasibility

The final work completed under the design component of the Population Health Measures project involved two efforts:

1. An assessment of the data sources and infrastructure to obtain these measures in a comprehensive system to measure population health.
2. A deployment plan or mapped progression of the proposed measures and how, ideally, they move from process to structure to outcome measures, based on the feasibility of capturing the data.

To design an actionable plan for measures to be used in the near and long-term, analysis of electronic measure extraction and the data infrastructure readiness must be performed. Given the consistent evolution of this work; design, discussion and stakeholder engagement will be ongoing to assess measure feasibility alongside ongoing health transformation in the State. This initial work sets the stage for establishing and testing measures of population health in Maryland at a broader level than previous.

The State worked to understand the current and future data environment for the proposed population health measures. This required two concurrent work streams:

### Data Assessment

The project involved an EHR Data Assessment to identify the ability to capture the necessary data elements to accurately capture the proposed priority measure. Specifically, CRISP (state HIE) and CPHIT assessed the feasibility of current EHR type data being collected at an HIE level. This involved assessing feasibility of extracting priority measures from sample EHR data systems for near term deployment. The team reviewed C-CDA (Consolidated – Clinical Document Architecture) components (including upcoming releases) and determined what could be measured based on the standard content of that document; focusing on the reduced 4 priority measures (Body Mass Index (BMI), Smoking, Hypertension (HTN) and Falls). Working with CRISP, work included:

- C-CDA assessment
- Measure assessment by priority measures



- Assessment of available data under new CMS recommended Quality Reporting Document Architecture (QRDA) including Category 1 and 3 document reporting at the patient and population level

Overall, it has been determined that parts of the measures can be accurately captured and calculated today, but additional work will need to be done in the upcoming months and years to be able to fully calculate the measures as proposed (outcome rather than process oriented measures).

### Data Infrastructure plan

The initial data assessment shows data with various geographic denominators. The State would like to have various levels of geographic data, and therefore would require data that can be analyzed with more specific denominators. Currently, the smallest unit of analysis that can be aggregated for population level tracking and accountability is prioritized because of its ability to meet the goals of evaluating population health level data at a more granular, geographic level. (See Table 4 below.)

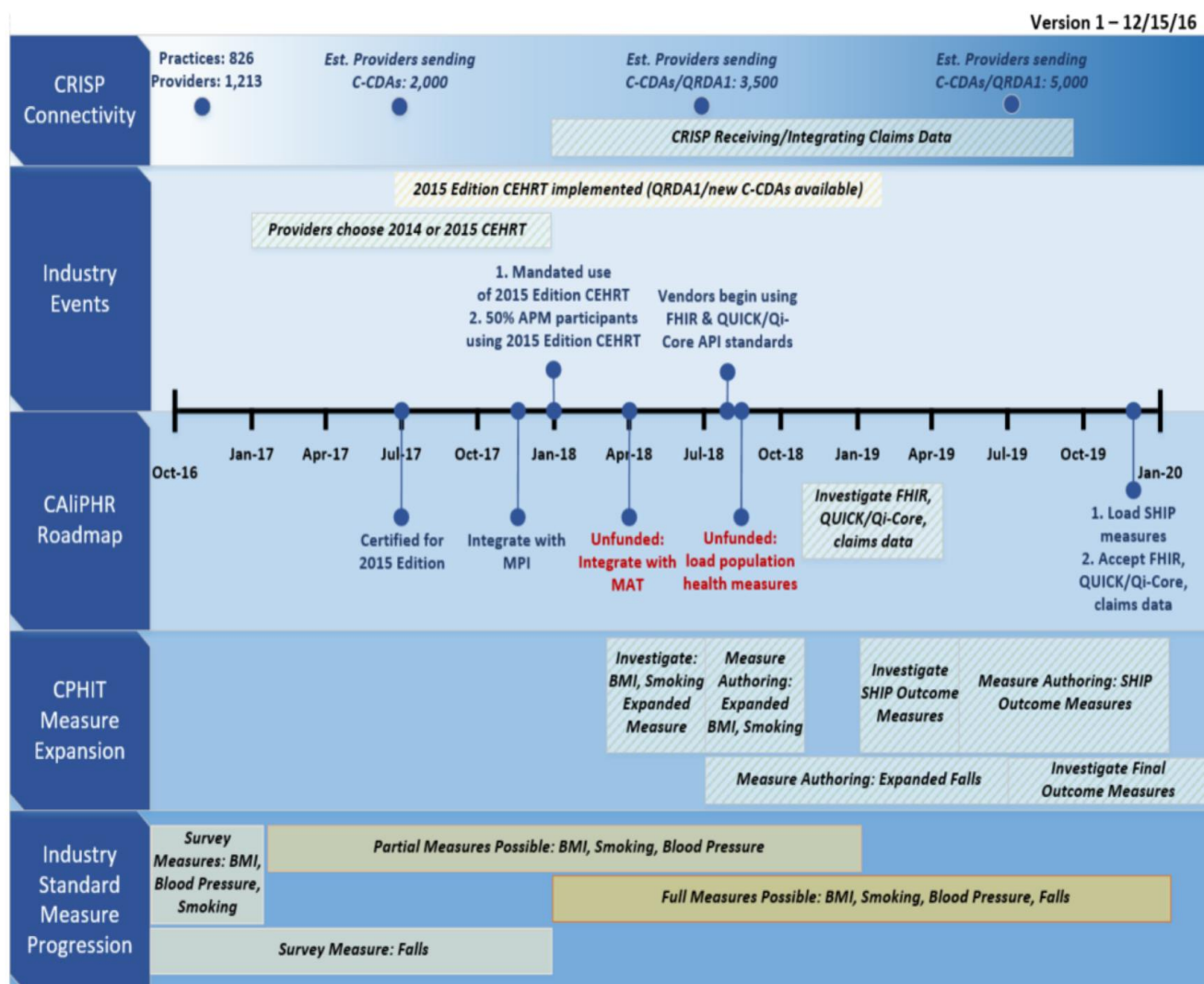
**Table 4: Level of Geographic Detail by Data Source**

<b>The Expected level of Geographic Details By Type/Source of Data</b>					
<b><u>Data Type</u></b>	<b><u>Individual</u></b>	<b><u>Zip code /Track</u></b>	<b><u>County</u></b>	<b><u>State</u></b>	<b><u>National</u></b>
<b>Clinical</b>	EHR				
<b>Administrative</b>	CRISP	HSCRC, MHCC/ Claims		Medicaid	
<b>Survey</b>		Census MDP	BRFSS	YRBSS BHA	YRBSS
<b>Vital Records</b>			Birth, Death, Mortality		

The timeline for continuing data assessment in Maryland and subsequently deployment measures is summarized in the Figure 3 below. This is a preliminary estimate of how fast measures could be rolled out given the current data infrastructure as it relates to electronic measurement, electronic health record connectivity to CRISP, and policy and operational changes taking place at the state and federal levels. Maryland will be meeting with stakeholders in additional planning meetings for the foreseeable

future to plan out how to appropriately deploy and progress measurement to meet its population health needs.

**Figure 3: Summary Timeline of Population Health Measures Deployment Plan and Data Assessment**



## Data Infrastructure and Measure Deployment Plan

The Data Infrastructure and Measure Deployment Plans work together. This component of the project begins to develop a strategic approach for incorporating EHR and other future data into a data infrastructure that leverages CRISP. As the data sources become clearer, each data source will be accompanied by a map outlining a reasonable transition of the measures provided by that data source.

The State is proposing plans for measures to evolve from process to structure to outcome measures as data and information becomes more available (deployment plans). The State developed a Measure Deployment Progression Plan for the 4 Priority Population Health Measures. This Plan detailed the transition from process to structure to outcome measures for capturing and measuring population health. The four metrics are:

- Body Mass Index (BMI)
- Hypertension (HTN)
- Smoking
- Falls

For example, in Figure 4 below there is a sketch of a measure progression plan for hypertension. The near-term measure would manifest in an expected 6 months to two years and the mid/long-term measure would look to see results in 3 to 5 years. The Deployment Plan includes time frame dimensions, possible next stage metrics and new data sources.

The deployment plan is organized by listing the four proposed measures and connecting them to the available SHIP measures. The SHIP measures are considered the ultimate measures to address the health of the population in Maryland. While they are considered as the areas of importance in population health for Maryland policy makers, they need target revision. In addition, SHIP measures are based on survey data. The Deployment Plan is developed to show how the 4 proposed measures can change based on the availability of data that moves away from survey data to more granular, individual data at a geographic level. This shift in data can then address the ultimate goal defined by the SHIP measures, or the long-term population health outcome, in an individual level manner and measure. The way that measures change over time is by changing their data sources from survey based data to possibly available billing data sources and individual level data through available EHR. In other words, naming SHIP measures as the long-term measures does not look to move to survey based measures in long term rather looks to utilize the SHIP measures as the areas of improvement to focus on, and proposes individual level measures to evaluate and look at over time to achieve the long-term goal of the SHIP measures.

### **Example of Measure Deployment**

Hypertension (HTN) is one of the proposed priority measures. Collecting HTN is from data on high blood pressure screening, and data on recommended follow-up plans to help detect those adults with high blood pressure and manage them in an outpatient setting. It addresses the long-term SHIP measure of decreasing “emergency department visit rate due to hypertension”.

To achieve this long-term goal DHMH would be required to collect data on screening of blood pressure (BP). Namely DHMH would look to collect the percentage of patients aged 18 years and older seen during the reporting period who were screened for high blood pressure and who have a recommended

follow-up plan documented based on the current blood pressure reading. The recommended measure addresses CMS measure # 22v5 (see Figure 4).

CMS specified reporting occurs via the health care system. For this project the definition is expanded to claims-based (i.e., billing) population health data sources and those non-traditional locations with potential access to EHRs and other data sources. Some examples are LHD clinics, community health clinics, mobile vans, health fairs, school based health centers, and community outreach programs. The definition is also expanded to include blood pressure reporting for people in a specific catchment area. Depending on the availability of the data, a phased-approach in reporting this measure may be necessary. Some data such as those population health measures collected through mobile vans and health fairs might not be readily available at the onset.

*Short term (current):* The recommended measure addresses two process measures and an outcome measure. Visits for BP screening and follow up visits function as the process measures and age adjusted BP operates as the outcome measure. Currently state-submitted information of person-level utilization of services can be collected through CMS Medicaid Analytic eXtract (MAX). This provides claims data on screening for BP and follow up visits. Person-level data files are available for all states and DC starting in 1999, only selected states are available prior to 1999. It is unclear at what geographic level data may be available - at the patient or provider level. Many ambulatory, inpatient and emergency department EHRs collect BP scores during an encounter on an individual level. Having patients' addresses and their zip code from EHRs provides the potential for geo-coding the BP data and generating a report at the zip code level.

Currently, most electronic health record systems connected to CRISP in Maryland (hospital and non-hospital), are Meaningful Use compliant, and as such do correctly record vitals (including blood pressure) for most visits (>75%). However, CRISP currently receives this data specific to calculating the blood pressure measure on only about 25% of patients. This substantial drop is a result of the vitals section not being always required in the C-CDA documents commonly sent to CRISP. Therefore, the BP information is available to calculate the first part of the measure, the percentage of patients with a reported BP score but not necessarily the second part of the measure, both the follow-up visit and the age adjusted BP. The current documents sent to CRISP rarely send any exclusion information, intervention information, or procedure orders. For example, this information might include exercise or diet counseling or a nutrition referral. The information on interventions and plans is necessary to calculate aspects of the numerator criteria for the second part of the measure; a follow-up plan for those with BP outside of normal parameters.

*Near term (6 months to 2 years):* In the next 6 months to 2 years CRISP expects to report BP scores for the Maryland population who have sought care at a facility which participates in CRISP. This is due to the newer requirement for clinical systems, which allow a user to export a document specifically built to

export and share data for certain clinical quality measures, a QRDA. The system would be able to generate and send QRDA Category 1 and 3 documents.

Source systems are only required to generate and send the document if they are certified to do so. Because BP is very common, CRISP expects most organizations to have the capability to generate the data for BP measures, including both the denominator and numerator information.

*Mid to Long Term (3 to 5 years):* CRISP continues to grow in multiple measure areas such as in population served by CRISP in organizations served by CRISP and thus an increase in provider participation, in quality of data gathered, and in data formats (e.g. QRDA) containing additional data. This makes it possible to address the long-term goals defined by SHIP measures for BP screening, BP follow up, and BP control in adults and children populations.

*Longer Term (5 to 10 years):* In the longer term (> 5 years) BP reported data from EHRs would help DHMH to establish a hypertension surveillance system with continuous BP reporting through EHRs. EHRs would be used to calculate hypertension rates in specific catchment areas and changes in its pattern over the time. This evolution requires the collection of data from those non-traditional locations with potential access to EHRs and other data sources such as LHD clinics, community health clinics, mobile vans, health fairs, school based health centers, and community outreach programs.

Figure 4: Sketch of a Possible Measurement Deployment Plan (Hypertension as an Example):

High Blood Pressure

Measurement Deployment Plan; High Blood Pressure							
Triple Aim	Milestones	Process and Output Measures			Outcomes Measures		Impact
	Time Frame	Short Term (Current)	Near Term (6 months to 2 years)		Mid to Long Term (3 to 5 years)		Longer Term (5 to 10 years)
					SHIP Categories	SHIP Measures	
	Geographic Level	State	Individual				
	Data Sources	Medicaid	EHR	CRISP			

<b>Cost of Care</b>		Reduce total cost of care; Hospital and ER utilization as proxy for total cost of care using metric developed/endorsed by NQF. Several of current HSCRC mandated measures address this.					
<b>Population Health</b>	Screening for high blood pressure and follow-up for community/population (CMS#22v5)	Claims data on screening for HTN and f/u visit	Screening for High Blood Pressure and Follow up for a community/population (with specific BP)	The BP measure is available with data found in the C-CDA. There is partial coverage for data needed within the numerator criteria to calculate f/u visits.	Quality Preventive Care	Emergency department visit rate due to hypertension	Hypertension surveillance in a specific catchment area with application of BP measurements through EHR
<b>Patient Experience of Care</b>		HSCRC and CMS Measures on Patient Experience					

## Future Recommendations and Next Steps

The Population Health Measures project aligns with the State's Progression Plan and its component models to drive population health. As Maryland has outlined in the Plan, the State is laser focused on improving population health. Strategies include address upstream influences on health status, including personal health behaviors, behavioral health issues and environmental factors particularly for vulnerable populations. To drive interventions that address population health strategies, Maryland seeks to foster accountability for population health in an incremental approach that makes the best use of measures in a thoughtful and appropriate manner.

The Measures project supports this overarching aim by directly integrating into the State's All Payer Model Amendment which calls for a Population Health Plan. The Population Health Plan will describe a transformation to value-based payments for selected population health measures.

Below is a year by year review of potential measure progression based on anticipated data infrastructure developments.

## Measurement Progression Strategy by Calendar Year

The following outlines a strategy for the progression from the existing population health measures available today to the more mature and robust population health outcome measures of the future. An incremental approach to this process allows DHMH to extract useful population health data from day one, but also ensures progress towards the overall goal of conducting more comprehensive and outcome based measurement. This strategy is impacted by market/industry factors, data availability, funding, and measure authoring cycles. Thus, the timelines and milestones identified below are subject to change.

A summary timeline of Measurement progression and data infrastructure is proposed below. This timeline will guide discussions in 2017 on developing the data infrastructure, measure deployment, and additional stakeholder input.

### Near-Term (6 Months to 2 years)

#### 2017 Calendar Year

- Presently, through use of the CQM Aligned Population Health Reporting Tool (CRISP CALiPHR tool), CRISP partially calculates the industry standard BMI, High Blood Pressure, and Smoking Status measures. The measures can only partially be calculated due to limitations of the C-CDA described above.
- In the summer of 2017, CRISP anticipates that EHR vendors will begin rolling out a 2015 Edition ONC Certified technology. These upgraded EHRs will be capable of exporting QRDA Category 1 files, which are necessary to calculate the full industry standard measures.



- o CRISP will pilot QRDA Category 1 data feeds with a practice to assess the quality of data, and its ability to meet the needs of the priority population health measures.

## **2018 Calendar Year**

- By January 2018, all providers participating in the EHR Incentive Program or the Quality Payment Program will be required to have adopted 2015 Edition Certification. As CRISP begins establishing QRDA Category 1 connections, the full industry standard BMI, High Blood Pressure, Smoking Status, and Falls measures will be deployed with CALiPHR.
- In the spring of 2018, CRISP will investigate whether expanded BMI and Smoking measures exist to cover the age ranges excluded from industry standard measures. If measures do not exist, CRISP will need to create a measure authoring strategy to author the measures.
  - o In the summer of 2018, CRISP will begin the process of authoring the expanded BMI, Smoking, and Falls measures.
  - o The Falls expanded measure requires clinical expertise to make the necessary changes, so the process will likely take longer.
- In the winter of 2018, CRISP will begin working with CMS, ONC, and NCQA to determine if draft outcome measures exist for the four population health measurement areas.
  - o If no draft measures exist, DHMH should facilitate a measure authoring strategy and process, which includes the convening of clinical experts and measure authors.

## **Mid-Term (3 to 5 years)**

### **2019 Calendar Year**

The industry standard measures will remain in production for population health surveillance.

By January 2019, CRISP will deploy the expanded BMI and Smoking measures (that cover the age ranges not covered by the industry specific measures) to all CRISP/CALiPHR participants.

- The expanded Falls measure will be deployed in the summer/fall timeframe of 2019.
- In the spring/summer timeframe, DHMH will facilitate the measure authoring process as laid out in the strategy previously created.
  - o Clinicians and measure authors will be retained to author a draft version of the SHIP process/outcome measures.
- In the summer of 2019, DHMH will facilitate a measure authoring strategy and process to author Final Population Health outcome measures.

- In the winter of 2019, DHMH will facilitate the measure authoring process for the Final Population Health outcome measures.
  - Clinicians and measure authors will be retained to author draft version of the Final Population Health Outcome measures.
- By December of 2019, CRISP will begin piloting the draft SHIP process/outcome measure with select practices and analyze the results.

#### **2020 through 2023**

- CRISP will deploy final versions of the SHIP process/outcome measures for all CRISP/CAIiPHR participants.
  - The industry standard measures and expanded measures will remain in production.
- CRISP will deploy the Final Population Health Outcome measures to production
  - The industry standard, expanded, and SHIP process/outcome measures will remain in production.

#### **Long-Term (5+ years)**

##### **2024 through 2029**

- CRISP will work with DHMH to ensure that all deployed population health measures meet the program requirements.
- CRISP will periodically assess whether new measures exist within the market, or new data sources/types exist to further supplement population health measurement.

### **Additional Information on Methodologies and Deployment**

Further detail on the population health measurement project, including specifications, digital data infrastructure and measure deployment are available via <https://mmcp.dhmd.maryland.gov/sim/Pages/Home.aspx>.

## **Appendix E**

### **Care Plan Exchange Report**

# Care Plan Exchange Report



## CRISP

**Chesapeake Regional Information  
System for our Patients**

---

*Connecting Providers with Technology  
to Improve Patient Care*





## Table of Contents

<b>Executive Summary .....</b>	<b>3</b>
Care Plan Development Findings .....	3
Care Plan Exchange Findings .....	3
Next Steps .....	3
<b>Introduction.....</b>	<b>4</b>
Purpose of Project.....	4
<b>Background.....</b>	<b>5</b>
Current CRISP Services.....	5
Care Coordination Workgroup.....	5
Deployment of New CRISP Infrastructure.....	6
<b>Current Care Plan Development Overview .....</b>	<b>7</b>
Care Plan Document Standards .....	7
Hospital Care Planning .....	8
Health Plan Care Planning.....	9
<b>Current CRISP Approach to Care Plan Exchange.....</b>	<b>10</b>
Challenges and Limitations .....	14
<b>Next Steps.....</b>	<b>15</b>
<b>Appendix A: Care Plan Examples .....</b>	<b>17</b>
Bon Secours Baltimore Health System Examples .....	17
St. Agnes Hospital Example .....	20
<b>Appendix B: EHR Integration Approach .....</b>	<b>21</b>



## **Executive Summary**

As part of Maryland's Round Two State Innovation Model (SIM) Design grant from the Center for Medicare and Medicaid Innovation (CMMI), Chesapeake Regional information System for our Patients (CRISP) worked with stakeholders over the past year to develop an approach to enable the aggregation and exchange of care plans across providers who are treating the same patients, especially during emergency room visits and hospitalizations. Improving the exchange of care plans will help to support the goal of the SIM Design work to develop a strategy to integrate care delivery for high need patients in Maryland including those with multiple chronic illnesses, high utilizer populations, and individuals dually-eligible for both Medicaid and Medicare. This report outlines the current state of care plan development in Maryland and the CRISP enabled solutions to store and make available care plans across providers who are treating the same patients.

### ***Care Plan Development Findings***

Care plans are a new document that the provider community is still in the process of defining and around which standards and clinical norms are still developing. Developing care plans is not currently embedded into clinical responsibilities and is a time consuming process that is not always a priority. Currently when care plans are developed there is significant variability in the development process and the structure and content of care plans across organizations. No consensus has developed on what should be included. Patients can have multiple active care plans from different organizations.

The current technical standards for care plans are at a nascent stage of adoption and deployment by health IT developers. The most prominent technical standard for care plans used by health IT developers and supported by the Office of the National Coordinator for Health Information Technology is in the early stage of being rolled out and it is unclear how many health IT developers will adopt this optional standard.

### ***Care Plan Exchange Findings***

Over the past year, CRISP has worked closely with stakeholders to develop a scalable solution, currently in use by three hospitals in Maryland, to facilitate care plan exchange from hospitals to other providers treating the same patient. CRISP aggregates care plans from these facilities and makes them available through a variety of platforms for other providers to access. CRISP is also working with facilities to develop and share care alerts, which are designed to provide a quick view of actionable information on a patient, particularly to support providers who have not previously seen a patient. This initial set of service offerings are a starting point to support providers, based on existing technology and workflows, and will be built upon moving forward.

### ***Next Steps***

As implementation of Maryland's All Payer Model moves forward care coordination will continue to increase in importance to Maryland stakeholders. CRISP has implemented foundational infrastructure to centrally aggregate care plans and make them available through multiple avenues to providers. In the near term, CRISP is working to expand the number and types of organizations submitting and using care plans moving forward. Health plans are a significant potential source of care plans for CRISP that to date have not been made available for exchange. CRISP will continue to work to improve the initial infrastructure to make it easier for providers to integrate care plans and care alerts natively within their EHRs. In the long term, CRISP



is working to develop and implement a policy framework to allow non-covered entities to submit care plans to CRISP. This will enable community based organizations, an important player to the long term success of the All Payer Model, to share care plans through CRISP as well.

In addition to the work CRISP will undertake, stakeholders and policy makers have a number of potential opportunities they could pursue to further support the exchange of care plans. Providers could develop consensus on the overall structure of a care plan or a subset of content that should be included and a common approach for determining which patients should receive care plans. Stakeholders also have the opportunity to develop approaches to coordinate care management resources for common patients with care plans.

## Introduction

In recent years, Maryland has embarked on a significant and innovative effort to improve care and reduce growth in health care spending. In this effort, Maryland has partnered with the Centers for Medicare and Medicaid Services (CMS) to transform the state's existing all-payer hospital payment system that has been in place for over forty years. Maryland received approval of the new All-Payer Model (Model) and began implementation at the start of 2014. The Model includes a number of cost containment and quality improvement requirements including:

- All-payer, total hospital per capita annual revenue growth no greater than 3.58 percent;
- Medicare hospital payment savings of \$330 million over five years relative to the national growth rate;
- Reduce Medicare 30-day unadjusted, all-cause, all-site readmission rate to the corresponding national average over five years;
- An annual aggregate reduction of 6.89 percent in Potentially Preventable Conditions (PPCs) over five years, which will result in a cumulative reduction of 30 percent in PPCs over the life of the model; and
- Other outcomes and quality indicators to be measured and monitored.

Improving care coordination is an important component of Maryland's strategy to meet the goals of the Model.<sup>1</sup> To support this work, Chesapeake Regional information System for our Patients (CRISP) has embarked on an expansion of its existing services to cover the cooperative IT and data needs of stakeholders in Maryland, including hospital systems, physicians, health plans, and public health officials.

Over the past year CRISP has worked closely with stakeholders to identify the statewide care coordination needs that would benefit most from cooperative IT solutions. Stakeholders identified the increasing importance of sharing care plans across providers as care management and care coordination activities accelerate across the state.

## Purpose of Project

Based on this feedback, and as part of Maryland's Round Two State Innovation Model Design grant from CMMI, CRISP worked with stakeholders over the past year to develop an approach to enable the aggregation and exchange of care plans. The approach described in this report has been to expand on the early work

---

<sup>1</sup> Care coordination involves deliberately organizing patient care activities and sharing information among all of the participants concerned with a patient's care to achieve safer and more effective care. Source <http://www.ahrq.gov/professionals/prevention-chronic-care/improve/coordination/index.html>



already in development, facilitating the creation of a state-wide solution. This report outlines the current state of care plan development in Maryland and the CRISP enabled solutions to store and make available care plans across providers who are treating the same patients, especially during emergency room visits and hospitalizations. Improving the exchange of care plans will help to support the goal of the SIM Design work to develop a strategy to integrate care delivery for high need patients in Maryland including those with multiple chronic illnesses, high utilizer populations, and individuals dually-eligible for both Medicaid and Medicare.

## **Background**

### ***Current CRISP Services***

CRISP started eight years ago with a focus on enabling providers to access patient data at the point-of-care to support treatment use cases. The Clinical Portal, CRISP's initial services offering, provides access to lab results, radiology reports, electronic reports and discharge summaries. Over time the information available in the Clinical Portal has expanded to include encounter information and medications from the Prescription Drug Monitoring Program (PDMP) in Maryland and other neighboring states. CRISP's service offerings have also expanded to include encounter notifications, the Payer Portal, and reporting analytics services. With the addition of these services CRISP has also moved from enabling point-of-care access only for treatment purposes to supporting a wider set of uses including care coordination and quality. CRISP has also expanded the allowed users from providers only to include, for certain services and under set rules, care coordinators and payer staff.

Today, CRISP has 232 active clinical data feed connections to healthcare organizations in Maryland and Washington D.C. All of the acute care hospitals in Maryland and most in Washington D.C. are connected to CRISP. CRISP is connected to long-term care facilities, ambulatory providers, radiology facilities, laboratories, and emergency medical facilities. Providers log approximately 125,000 queries for patient information per month from the Clinical Portal. Over 700,000 encounter notifications are sent to subscribing providers per month.

### ***Care Coordination Workgroup***

Over the past seven years CRISP has been engaged with a breadth of provider organizations to facilitate data exchange to improve care delivery. Accordingly, in late 2014, the Health Services Cost Review Commission convened the Care Coordination Workgroup, which established a new focus for CRISP services to support care management through enhanced data infrastructure. Specifically, the Care Coordination Workgroup identified goals to build on CRISP's data exchange infrastructure and to enable the exchange of care profiles and care plans. As stated in the Workgroup final report:

The care plan is the comprehensive plan of services and other activities aimed at assisting patients and their care givers achieve individualized and prioritized goals; care planning is the process that generates a care plan. Care plans have the information in the care profile but also include a much broader sweep of services. Care plans identify the range of problems, the current plans for each of the problems and the overall plan that the patient and care team have made for their optimal care and well-being. These care plans need regular maintenance. Care coordination designates the processes that the care team uses to ensure that the care plan is implemented across time and settings.





Accordingly, the Workgroup laid out the case for a new set of services and infrastructure necessary to move the State forward to expeditiously manage high needs patients including the sharing of care plans.

### ***Deployment of New CRISP Infrastructure***

The CRISP Integrated Care Network (ICN) IT Infrastructure project is the overarching set of shared IT infrastructure being developed statewide to support care management by providers and payers. The underlying assumption is that in their efforts to achieve the three-part aim of health reform, Maryland stakeholders will need new IT infrastructure. Pursuing some elements of the build-out cooperatively will result in more complete patient information being available to clinicians and care managers, since individual institutions using just their own data sources often have only a partial picture. A shared IT infrastructure with active exchange of patient data will result in better coordination for complex patients who use multiple different hospitals and health systems. Subsequently, better coordination will result in further cost savings, by avoiding duplication of effort.

Having been chartered to pursue health IT projects which are best done cooperatively, CRISP is well positioned to manage the build-out of shared infrastructure. By virtue of its governance model, the stakeholders who use CRISP services direct the organization, providing oversight and accountability, and this design has been extended to the new infrastructure project. The new tools are being built on top of the existing HIE platform, which CRISP already operates.

The CRISP ICN IT Infrastructure aims to connect providers in multiple settings -- from hospitals and physician practices to long-term care facilities -- with the proper information to improve health outcomes and reduce costs by providing tools, data, and services to support care coordination. The CRISP ICN IT Infrastructure project is a multi-year initiative that includes seven primary workstreams that together build on the existing CRISP data and service offerings to enhance clinical care and care coordination -- especially when patients receive services from multiple providers. CRISP is working in collaboration with and in support of the Regional Partnerships for Health System Transformation participants. The CRISP ICN IT Infrastructure workstreams are organized into seven major initiatives that include:

1. **Ambulatory Connectivity:** Connect more practices, long-term care facilities, and other health providers to the CRISP network.
2. **Data Router:** Build a data router that includes data normalization, patient consent management, patient-provider relationships – for sharing patient-level data.
3. **Clinical Portal Enhancements:** Enhance the existing Clinical Query Portal with a patient care overview; a provider directory; information on other known patient-provider relationships; and risk scores.
4. **Notification & Alerting:** Create new alerting tools to allow notifications to happen within the context of a provider's existing workflow.
5. **Reporting & Analytics:** Expand existing CRISP reporting services and make them available to a wider audience of providers and care managers.
6. **Basic Care Management Software:** Support care management efforts throughout the state and region – through data feeds, reports and potentially a shared care management platform.
7. **Practice Transformation:** Assist provider efforts to improve care delivery by training them on leveraging CRISP data and service, sharing best practices, and supporting collaborative partnerships.



The Regional Partnerships and other collaborative efforts that followed the recommendations of the Care Coordination Workgroup and leveraged the infrastructure developed by CRISP. The ICN services mentioned above, which were in large part developed in response to the global budget model, created opportunities for CRISP to engage in planning processes to determine specific processes around care plan creation, sharing, and use. Some regional partnerships, especially the Bay Area Transformation Partnership, placed special emphasis on care plan and care alert sharing as a critical aspect of care coordination. As CRISP began to engage more deeply in care plan document sharing approaches, additional efforts within specific hospitals began to emerge. The hospitals that were actively working on care plan creation processes offered an opportunity for CRISP to work directly with clinicians to begin working toward care plan sharing pilots.

Separately, managed care health plans and other specific health plan-led care management models have incorporated care plans into their models. Medicaid Managed Care Organizations (MCO) and CareFirst's Patient Centered Medical Home Program each have significant care plan creation and curation processes which could contribute to a care plan exchange ecosystem enabled through CRISP.

## **Current Care Plan Development Overview**

Care planning and care plan development have been of growing importance in the broader care managements discussions in Maryland in the past year. Hospitals, community-based organizations, and health plans have all been actively working to increase care planning efforts across the state.

### ***Care Plan Document Standards***

The current technical standards for care plans are at a nascent stage of adoption and deployment by health IT developers. The most prominent technical standard for care plans used across health IT developers is a template of the Consolidated-Clinical Document Architecture (C-CDA), which was developed by Health Level Seven International (HL7), a standards developing organization. This template is new in the updated C-CDA version; formerly, components of the care plan were included in the Care Coordination Document (CCD) template, though not widely implemented.

In an effort to promote the use of the care plan template, the Office of the National Coordinator for Health Information Technology (ONC) included it as an optional certification criteria in the 2015 Edition Health IT Certification Criteria. The criteria requires the ability to create a care plan using the care plan template in C-CDA Release 2.1 but does not address the ability to receive or reconcile information in a care plan into a patient's record. The care plan template provides a structured format for documenting information such as goals, health concerns, health status evaluations, and outcomes and interventions. It is unclear how many health IT developers will get certified to this optional certification criteria. As of the time of writing this report, certification for the 2015 Edition had just started and no products had yet been certified.

CMS is interested in further advancing the use of the care plan template by health IT developers and providers. While not required in the 2015 Edition of certification or for Meaningful Use, CMS is requiring providers have technology certified to the care plan criteria to participate in certain alternative payment models. CMS defines what certified technology participating providers must use when it establishes the requirements for each alternative payment model. For instance, CMS is requiring that by the end of 2018, providers participating in the Comprehensive Primary Care Plus Track 2 must have technology certified to the care plan criteria and utilize the technology to create and share care plans. In the notice of proposed rulemaking implementing the Merit-Based Incentive Payment System (MIPS), CMS proposes to use the Meaningful Use definition of certified technology for eligible clinicians participating in MIPS, which does not require providers to have technology certified to the care plan criteria.



## Hospital Care Planning

Based on CRISP discussions with stakeholders, hospitals are in the early stages of establishing internal processes for the creation of care plans. Today, there is not a consistent definition across organizations or programs of what a care plan is and what content it should contain. Care plans are being used for varying purposes including to support care coordination and avoid inappropriate utilization of services. A sample care plan is included below and Appendix A includes additional examples. While hospitals are taking varied approaches to the details of creating care plans the following steps are generally implemented by Maryland hospitals:

1. **Identifying Patients for Care Planning:** Hospitals are establishing criteria for which patients should receive a care plan. Qualifying criteria for a patient to receive a care plan are usually focused on high utilization and cost populations. The criteria often look at measures such as: utilization of emergency department services, total costs, or in some cases specific qualifying chronic conditions (i.e. chronic obstructive pulmonary disease).
2. **Care Plan Development:** Three general approaches to developing care plans have been found in Maryland hospitals to date. In the first approach, generic care plan templates associated with specific chronic conditions or high ED utilization are developed with no content tailored to the patient. In the second approach, patient-centric care plans that are tailored to each individual patient are developed. The third approach, is a hybrid of the first two approaches combining generic content with patient specific tailored content in the care plan.
3. **Governance Process:** Hospitals are typically establishing multidisciplinary review committees that provide input and approval of care plans and in some cases support their ongoing management. Hospitals are finding this adds rigor to the care planning process but it is time consuming and can be difficult to prioritize in the context of other important clinical objectives.

Figure 1: Care Plan Example

COPD/Asthma Management
@name@ has been identified as patient who appears to have difficulty managing their COPD/Asthma in the community. It is recommended that:
<div><div>1) If there is no significant, <b>objective</b> criteria to admit or place the patient in an observation status (such as a low O2 sat, or failure to space nebs), please try to discharge the patient if it is safe to do so.</div><div>2) Please write orders for pre and post nebulization peak flows.</div><div>3) Administer a long acting <b>INTRAMUSCULAR</b> steroid (such as Decadron) prior to discharge.</div><div>4) <b>Give the patient an albuterol MDI for home;</b> write for "2 puffs" of an MDI, the patient can take the inhaler home afterwards.</div><div>5) During business hours, please contact the Community Health Worker at 443-683-0565 or a Care Transition Liaison at 410-382-0581 to see the patient in the ED to secure follow up care. After business hours, please leave a message on the Care Transitions after hour phone line at x3809 so that a member of the team can follow up with the patient.</div></div>
This plan approved for this patient by the Care Coordination Committee, a multidisciplinary team of physicians, social workers, case managers, nurses, outcomes managers, health advocates, and other members of the patient care team, on ***.



### *Hospital Challenges and Limitations*

Today, there are a limited number of hospitals that have adopted processes for creating care plan documents. Increasing hospital participation will be important to statewide efforts to improve care management. In hospitals that are creating care plans, the number being produced is a function of the resources available to create and approve them and the priority that the process takes in the context of other important clinical objectives.

Care plans are a new document that the provider community is still in the process of defining and around which standards and clinical norms are still developing. Developing care plans is not currently embedded into clinical responsibilities and is a time consuming process that is not always a priority. Currently when care plans are developed there is significant variability in the structure and content of care plans across organizations. No consensus has developed on what should be included. CRISP's experience with discharge summaries, a long standing clinical document, is that there is still great variability in what is captured across providers and organizations. Absent a broader process to create a standardized approach, there may be a similar trend with care plans.

Anecdotal information from hospitals has found that care plans significantly reduce utilization of services for patients that receive them. Similar reductions in utilization have been seen with generic and patient tailored care plans. The analyses have been based on only the hospital's data so it is unclear if the patient's utilization is increasing at other facilities.

### ***Health Plan Care Planning***

#### *Commercial Health Plans*

Health plans have historically had the most aligned financial interest in effectively managing the health and utilization of their members. Most notably within Maryland, CareFirst's Patient-Centered Medical Home (PCMH) program has a substantial emphasis on engaging chronically ill members in intensive and member-specific care planning processes.

As stated within the CareFirst PCMH Program Description and Guidelines, "the establishment of Care Plans by PCPs/NPs for the multi-chronic Member is intended to reduce hospital admissions and readmissions (and ER; use) and to overcome fragmentation in the health care system that is essential to improving outcomes for these Members. Breakdowns in the health status of Members are common due to the lack of coordination of services for the multi-chronic Member."

CareFirst creates several financial and non-financial incentives for the development of care plans. Care plans are created for patients who meet certain qualifying criteria and consent to participate. Providers are assisted in creating the care plans by care coordinators. PCMH providers receive payment for developing (\$200) and maintaining (\$100) care plans for members who meet the programs requirements. Care plans are created through a proprietary web-based system. Other CareFirst providers treating the patient can view the care plan through the provider portal.

The CareFirst model places substantial importance on the on-going engagement between the PCP and the member. The CareFirst PCMH Guidelines describes that "the PCP or NP must be deeply involved in the Care Plan and implementation process for their eligible Members. Each Care Plan must, in effect, constitute a "contract" between PCP or NP and Member if it is to be effective. Care Plan development and maintenance in the PCMH Program cannot be relegated by a PCP or NP to someone else."



However, the development and sharing of the care plan is internal to the CareFirst world. The care plans created through CareFirst's PCMH program are not available through CRISP and therefore not available to hospital providers treating a given CareFirst member during an emergency department or inpatient visit. While there has been minimal progress on any substantial number of care plans being shared from the hospital community, the existing care plan documents created through the CareFirst PCMH program could hold significant care coordination opportunity during hospitalization if shared through CRISP.

### *Medicaid Managed Care Organizations*

Medicaid Managed Care Organizations (MCOs) represent another existing source of care plans. Within MCOs the member specific content is typically a function of the member being engaged in specific case management services based on their medical needs or complexity or in specific disease management programs. Many case management services focus on certain conditions such as diabetes, asthma and HIV. Certain populations are also covered including pregnant, homeless, and individuals with developmental or physical disabilities.

MCOs take different approaches to patient enrollment but all provide the ability to opt-out of participation. Providers can refer patients to the MCO for care management or patients may self-refer. Some MCOs automatically enroll beneficiaries based on information from claims data or pharmacy data. For instance, Riverside Health automatically enrolls members who are identified as diabetic or asthmatic in their disease management program. Members are often stratified across risk levels and receive information resources to help manage their condition. Higher risk members can receive additional services such as dedicated care managers. Some provide notifications to the member's primary care provider of any gaps in care based on the MCOs care guidelines.

There are other specific programs, such as the Rare and Expensive Case Management program, which also produce patient specific management plans (though enrollees are not MCO members). However, CRISP has not yet engaged in enabling the sharing of MCO developed care plans through the HIE.

## **Current CRISP Approach to Care Plan Exchange**

As care management activity and care plan development accelerates throughout the state, the ability to share care plans across providers is becoming increasingly important. CRISP's core objective for care plans is to facilitate the exchange of care plan information among providers treating the same patient, especially during emergency room visits and hospitalizations. The initial focus has been on receiving care plans from hospitals as they have been at the center of Maryland's global budgeting efforts.

The care plan exchange services CRISP is deploying today serve as a starting point aimed at facilitating the availability and exchange of care plans documents and care alerts. It is anticipated this work will unearth other opportunities to further coordination (or de-duplication of services) by making visible the fact that a patient has multiple active care plans from different organizations.

Over the past year, CRISP has worked closely with stakeholders to develop a scalable solution to care plan exchange. The approach described in the next section outlines a systematic, efficient process to share care plans developed in hospitals and other care settings with other care providers around the state. CRISP is leveraging its state-wide infrastructure to develop a solution to address the care coordination challenges previously described to expand on the ad hoc sharing of care plans within organizations today.

### *Care Plan Exchange Solution*

To date, CRISP has focused on facilitating the exchange of care plans from hospitals to make them available to other providers treating the same patient. CRISP is currently receiving care plans from three hospitals, St.



Agnes Hospital, Bon Secours Baltimore Health System, and Upper Chesapeake Medical Center.<sup>2</sup> CRISP has been working with these hospitals for the past year to better understand how care plans are developed and how CRISP can support their exchange across organizations. As of May 2016, Greater Baltimore Medical Center and Carroll Hospital Palliative Care are in process of sharing care plans with CRISP. Additional hospitals are in discussion with CRISP to share care plans.

**Table 1: Organizations Sending Care Plans and Care Alerts to CRISP in Maryland**

<i>Organization</i>	<i>Document Types</i>	<i>Began Sharing with CRISP</i>
<b>St. Agnes Hospital</b>	Care plan	2016
<b>Bon Secours Baltimore Health System</b>	Care plan	2016
<b>Upper Chesapeake Medical Center</b>	Care plan	2016
<b>Anne Arundel Medical Center</b>	Care alert	2016
<b>Baltimore Washington Medical Center</b>	Care alert	2016

### Sharing Care Plans

For CRISP to enable care plan exchange, a few foundational elements have to be in place. **First**, organizations need to have care plans available to share. Organizations that do not already have processes in place to create care plans will need to develop them. These steps include:

- 1) Establishing qualifying criteria for which patients will receive care plans;
- 2) Allocating sufficient resources to implement and maintain ongoing support for the process of creating and maintaining care plans; and
- 3) Establishing a governance process to provide input into the development and structure of care plans.

To maintain momentum for effective care planning the process will need to become an organizational priority and be built into staff workflows and responsibilities.

**Second**, for inter-organizational electronic exchange, organizations must use the technical infrastructure CRISP has implemented to support the exchange of care plans. CRISP is focused on serving as a central hub for care plans for organizations that are able and willing to share them. The figure below outlines the live infrastructure CRISP is using to receive and share care plans today and the following texts describes the approach in more detail.

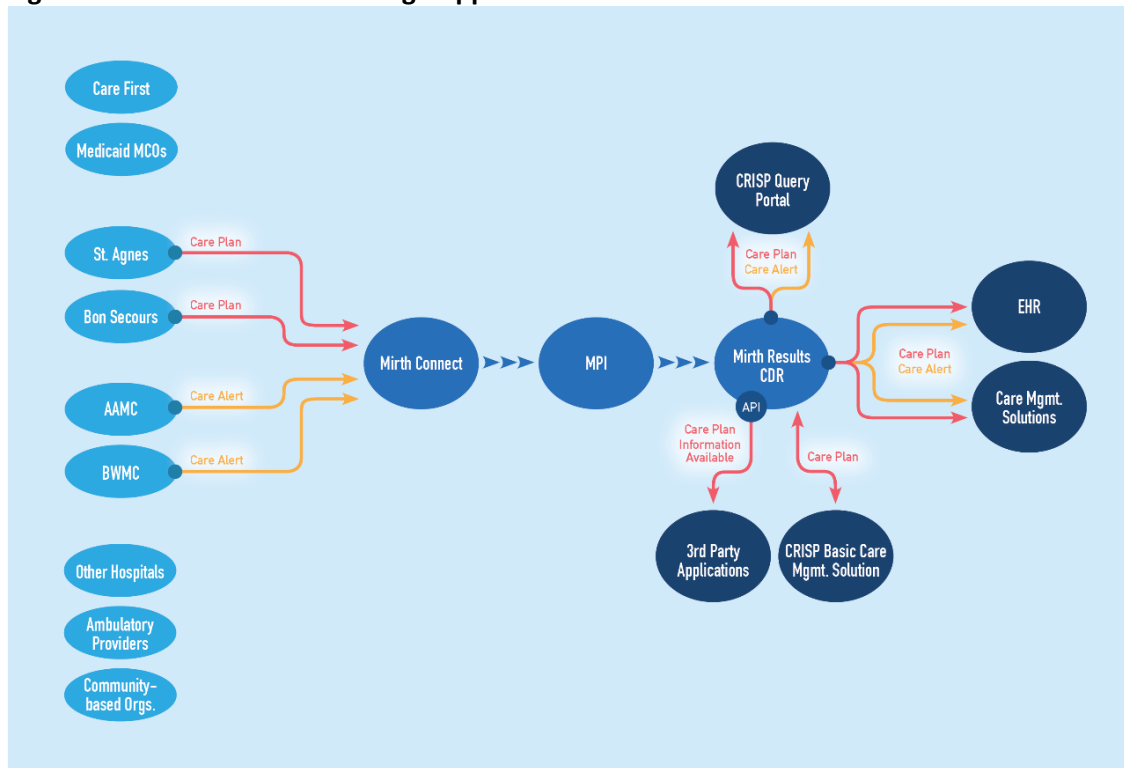
---

<sup>2</sup> Upper Chesapeake Medical Center is providing care plans through the CRISP basic care management solution, discussed in more detail below.





**Figure 2: CRISP Care Plan Exchange Approach**



In reviewing Figure 2, care plans are sent to CRISP through new or existing data feeds from participating organizations. CRISP is receiving care plans in a variety of formats (PDF, structured HL7 message) that organizations can send them today. When CRISP receives a care plan, it is turned into a PDF and made available to other providers treating the patient in a new section of the Clinical Portal patient summary screen called “Care Management.” The clinical portal is the main/initial access point for most providers. For an individual patient one care plan from each source is available in the Clinical Portal and when the plan is updated the previous version is replaced. For example, if hospital A shared a care plan on a patient with CRISP and then subsequently submitted an update of that care plan the updated version would replace the old care plan in the Clinical Portal.

In addition to the Clinical Portal, CRISP is working to make care plans available through multiple other avenues to meet the needs of providers. CRISP is actively working with health IT developers to integrate care plans and care alerts into providers’ native electronic health record (EHR) workflows. CRISP has created an application program interface (API) that will notify third party systems when a care plan is available on a patient. This will enable providers to receive in-context alerts in their EHR when a care plan is available in the Clinical Portal.

CRISP is offering a basic care management solution to organizations that do not currently have a care management solution that supports the development and exchange of care plans. Care plans created in the solution also populate the Clinical Portal. The basic care management solution is currently a pilot initiative underway to determine the value to participants of CRISP offering such a solution. For organizations that already have a care management solution in place, CRISP is working to integrate with their system to feed it with patient information, which could include care plans.



**Figure 3: Location of Care Plans in CRISP Clinical Portal**

ts Reports Setup Administration

**Rollins, Jenny K** Female 12/20/1978 (36 yrs) (Community ID:3344223)  
2985 Oxford Court, Columbus, MD 39701

Summary More Patient Information Patient Groups Patient Documents Interstate PDMP Care Profile

**Laboratories (12)**

Date	Name	Source
06/11/2014	TOTAL CHOLEST...	CGH
03/30/2013	CBC W/ AUTO DIFF	CGH
03/30/2013	MAGNESIUM	CGH
03/30/2013	CHEM7	CGH
03/30/2013	DIFFERENTIAL - ...	CGH

Immunizations (0) Problems (0) More  
No Immunizations to display

**Imaging (3)**

Date	Name	Source
03/29/2013	FLUORO. UP TO O...	CGH
03/29/2013	CHEST, SINGLE V...	CGH
03/28/2013	ANKLE, COMP. (3 V...	CGH

**Care Management**

Date	Name	Source
9/29/2015	CARE ALERT	AAMC
9/02/2015	MANAGEMENT PLAN	BSS

**Ambulatory Encounters (1)**

Date	Type	Source
06/27/2014	1	CGH

**Inpatient Encounters (2)** **Emergency Encounters (1)**

Date	Type	Source
06/11/2014	Emergency	CGH
03/28/2013	Emergency	CGH

**Documentation (1)**

Date	Name	Source
04/01/2013	OPERATIVE REPO...	CGH

**Medications (5)**

Date	Name	Source
06/16/2014	GCN (SIMVASTA...	PDMP
01/28/2014	GCN (HYDROC...	PDMP
01/28/2014	GCN (LORAZEP...	PDMP
11/26/2013	GCN (LYRICA 1...	PDMP

**Vitals (2)**

Name	Value	Collected
BMI	29	06/02/2014
BLOOD PRESSURE	160/97	06/02/2014

## Care Alert

A care alert can be a component of a care plan or shared via CRISP independent of a care plan. The Bay Area Transformation Partnership has championed the approach of developing and exchanging “care alerts” as a component of a care plan that is being extracted for quick view.<sup>3</sup> The intent of a care alert is to provide in a few sentences the most important and specific information another provider should know about a given patient. The care alert is designed to support providers who may not have previously seen a given patient, therefore exchange of the alert is a key aspect of its value. This approach recognizes the limited time providers have to review clinical documentation, especially when providing emergency care. While a care plan may contain important and more general guidance on a given patient’s health goals and the care alert may provide specific actionable information such as phone numbers for family members or a highly targeted course of action that has proven to be an effective path towards a disposition for a patient in crisis.

Care alerts are currently being piloted by Anne Arundel Medical Center and Baltimore Washington Medical Center. Care alerts are available in the “Care Management” section of the Clinical Portal. An important challenge associated with the care alert is motivating providers to create the content; something not currently embedded within most existing care planning processes.

## Care Alert Example

“This is a 45 year old with chronic schizophrenia that lives in a shelter in Dundalk. When she gets angry at staff (approximately every 3 months), she will use her cache of bus tokens to come to other hospitals and request hospitalization “for a few days until I get myself together because I’m suicidal and homicidal.” She is generally future oriented, has never attempted suicide, and never has a plan for suicide completion or a specific target of her homicidality. She is usually unhappy with but amenable to discharge.”

<sup>3</sup> The Bay Area Transformation Partnership includes the counties of Anne Arundel, Queen Anne’s and Talbot. Applicants included Anne Arundel Medical Center (lead applicant); University of Maryland Baltimore Washington Medical Center; Healthy Anne Arundel Coalition; and MedChi,





Care alerts will also be available in the CRISP Patient Care Overview, an on-the-fly compilation of pieces of care management data that might be relevant for a provider or care manager at the point of care. The Patient Care Overview will be accessible via one-click from the patient's CRISP summary page within the Clinical Portal and will display the following elements:

- **Patient Attribution:** Uses ENS data to indicate who else is involved (i.e., subscribed to the patient in ENS) in the care of the patient.
- **Prior Admissions:** Provides a list of the last 60 days of encounter information for patient.
- **Care Alert:** A short summary of the most pertinent information needed for a provider to treat the patient.
- **Care Manager Attribution:** List of care management programs the patient is enrolled in alongside the name of the care manager and their contact information.
- **Payer Submitted Risk Scores:** If available a payer can submit a risk score to CRISP and it will display in the portal with an explanation of the score and the organization that submitted it.

**Figure 4: Patient Care Overview Tab**

Summary	More Patient Information	Patient Groups	Patient Documents	Patient Care Overview	eHT HIE Worklist	Interstate PDMP
Organizations subscribed to this patient						
Participant				Care Program	Manager	
Name: CareFirst Insurance Phone Number: 410-555-1212				Diabetes Management	Davey Johnson	
Name: Medical Faculty Associates Phone Number: 410-555-1212						
Risk Measures						
Participant				Risk Score	Methodology	
Name: CareFirst Insurance Phone Number: 410-555-1212				Low	Lace -based on length of stay, ED visits, and comorbidities in the past 6 months	
Care Alerts						
No Care Alerts found						
Events						
Description			Source Name		Date	
ADT 01 Emergency			Suburban Hospital		2016-04-18	

### *Challenges and Limitations*

Exchanging care plans and making them available in the Clinical Portal will likely raise a number of new coordination questions across hospitals and other organizations. In cases when multiple hospitals have a care plan on the same patient, how will they coordinate efforts and resources? Will hospitals coordinate to develop a single unified care plan for the patient? To better leverage the information gained through care plan exchange efforts, organizations will have to work together to coordinate resource use on common patients.

The significant variability of the content of care plans and lack of widespread adoption of technical standards could hurt providers' willingness to review care plans from other organizations. Some provider leaders feel that without more consistent content across organizations' care plans it is likely that use will be limited as the provider accessing the document will be uncertain if they will find valuable information. Until additional hospitals start sharing care plans it will be difficult to determine if this concern is valid or not. As CMS and ONC continue to advance care plan standards adoption by health IT developers and push its use by providers, technical variability may be addressed.



As CRISP expands the types of organizations that we receive care plans from beyond hospitals and other covered entities new policy issues will arise. CRISP is continuing to evolve its governance and policy structure to adapt and address these new policy issues. For example, care management organizations and non-providers will be required to get the patient's consent prior to sharing a care plan with CRISP.

## Next Steps

As implementation of Maryland's All-Payer Model continues care management and care coordination will continue to increase in importance to Maryland stakeholders. CRISP is working to expand its technical infrastructure to support the cooperative IT needs of stakeholders to succeed in the All-Payer Model. CRISP has implemented an initial set of infrastructure to centrally aggregate care plans and make them available through multiple avenues to providers. Three hospitals are sharing care plans today. Health plans are a significant potential source of care plans for CRISP that to date have not been made available. CRISP will work over the next year to further advance the exchange of care plans through the following steps.

### *CRISP Priorities*

- **Expand Organizations Submitting and Using Care Plans:** In the near term, CRISP is actively working to expand the number of hospitals that submit care plans and care alerts. We are working to add additional sources of care plans and are in active discussion with health plans and ambulatory providers to begin sharing them. We are also working to inform providers of the availability of care plans in CRISP and encourage their use.
- **EHR Integration:** In the near term, CRISP is working to improve the initial infrastructure to make it easier for providers to integrate care plans and care alerts natively within their EHRs. This will include exposing access to the care plan via an API so that an EHR can query CRISP behind the scenes to check for the availability and actually present a care plan within the EHR workflow. This is the ideal workflow for accessing CRISP generally and is especially important in the context of indicating care plan availability.
- **Identify Additional Avenues to Leverage Care Plans:** In the medium term, CRISP will also work with users to determine additional avenues for leveraging care plans. For instance, functionality could be added to ENS to allow organizations to receive an alert when a new care plan has been developed for patients they are subscribed to.
- **Implement Policy Framework for Non-Covered Entities:** In the long term, CRISP is working to develop and implement a policy framework to allow non-covered entities to submit care plans to CRISP. This will enable community based organizations, an important player in the All Payer Model, to share care plans through CRISP as well.

In addition to the work CRISP will undertake, stakeholders and policy makers have a number of potential opportunities they could pursue to further support the exchange of care plans. In particular there are a number of areas where additional standardization of care plan approaches and content could be pursued if stakeholders are interested.

### *Policy Recommendations*

- **Standardize Care Plan Content:** Stakeholders have the opportunity to come together and agree on the overall structure of care plans or a subset of content that must be included in a care plan. This could help improve standardization and increase the utility of the document to other organizations as providers will know that certain content will always be included. Provider associations could be well positioned to lead this dialogue.



- **Coordinate Care Management Resources Across Organizations:** Enabling cross organization care plan exchange will unearth patients with care plans from multiple organizations. This will provide an opportunity for organizations to coordinate their efforts if desired. While CRISP is well positioned to assist with additional cooperative IT needs, the Regional Partnerships or provider associations are better positioned to lead the development of a coordinated approach to address the clinical and resource use questions raised when a patient has care plans from multiple organizations.
- **Common Criteria for Identifying Which Patients Should Receive a Care Plan:** Organizations could come together to establish common criteria for which patients should receive care plan. While there will be necessary and appropriate variability across organizations, depending on the alternative payment model they are participating in, certain common criteria could be established for all organizations while still enabling flexibility to support the needs of different alternative payment models. Provider associations could be well positioned to lead this dialogue.
- **Care Plan Infrastructure and Alternative Payment Models:** Providers looking to participate in future Alternative Payment Models programs will need to track requirements issued by CMS and other payers to determine how CEHRT will be defined in the future. CMS has already included a requirement in the CPC+ Track 2 that providers have technology certified to create a care plan by 2018. CMS and other payers may include this requirement in other Alternative Payment Models in the future. Consideration should also be given to how to expand care planning in Maryland over time to align with the future direction of U.S. Department of Health and Human Services.<sup>4</sup>

---

<sup>4</sup> ONC and CMS recently outlined a vision for creating a comprehensive shared care plan. See the following link for more information <http://catalyst.nejm.org/making-the-comprehensive-shared-care-plan-a-reality/>.



## Appendix A: Care Plan Examples

### *Bon Secours Baltimore Health System Examples*

#### **ACO Care Management Plan**

This patient is a member of the Good Help ACO Group. The ACO Management plan is intended to provide consistent evaluation of pertinent needs and treatment for this patient with appropriate follow up care.

Follow the ACO Care Management Plan as follows:

1. Please notify the Nurse Care Manager on the Care Team:
  - a. **If the patient has Dauda or Ahmed, call 443-683-0335**
  - b. **If the patient has any other PMD, call 443-602-2348**
  - c. **After hours and on weekends, leave a message at x3230**
2. Direct Patient or Care Provider to call their Primary Care Physician's Office on the next business day to arrange a post ED visit follow up within 5 days. If they do not have a PCP please provide them with contact information for Bon Secours Family Health and Wellness at (410) 362-3612.

---

#### **BRAVO/Cigna Healthspring Care Management Plan**

This patient has BRAVO/Cigna-Healthspring Insurance

BRAVO/Cigna-Healthspring has a large collection of resources and a walk-in clinic for all of their patients. This patient has been designated a High-Utilizer by BRAVO and has access to their "Complex Care" services which include case management, social work, pharmacy assistance, transportation, and food during their visits.

**They would like to pick up this patient after each discharge in order to help them secure services.**

If patient presents **during WALK IN CENTER BUSINESS HOURS** (Monday-Friday 8a-6p; Saturday 9a-4p) please do the following:

- 1) Clear the patient of any emergent medical condition
- 2) Call walk-in clinic charge nurse @ 443-257-2540 (cell) – CALL EVEN IF YOU HAVE "SOLVED" THE PATIENT'S PROBLEM
  - a. They will arrange for transportation (a van) to the walk-in center and then transport patient home as well
  - b. Give them the security desk phone number to call when transport arrives – 410-362-3479
- 3) Discharge patient to waiting room to wait for transport

If patient presents **after WALK IN CENTER BUSINESS HOURS**

1. Check for accuracy of patients address and telephone number



2. Have operator page the BRAVO hospitalist on call
  - a. Notify them of any barriers the patient is facing to getting care so that they can set up resources; they will arrange to have patient contacted and seen ASAP. Transportation is provided.
3. Refer patient to the BRAVO walk-in center for future visits that are not life threatening (transport provided):

312 N. Martin Luther King Jr. Blvd, 2<sup>nd</sup> Floor  
Baltimore, MD 21201  
(located behind the Rite Aid on MLK Blvd. and W. Saratoga St.)  
443-278-7001

---

### **COPD/Asthma Management**

@name@ has been identified as patient who appears to have difficulty managing their COPD/Asthma in the community. It is recommended that:

- 1) If there is no significant, objective criteria to admit or place the patient in an observation status (such as a low O2 sat, or failure to space nebs), please try to discharge the patient if it is safe to do so.
- 2) Please write orders for pre and post nebulization peak flows.
- 3) Administer a long acting INTRAMUSCULAR steroid (such as Decadron) prior to discharge.
- 4) Give the patient an albuterol MDI for home; write for "2 puffs" of an MDI, the patient can take the inhaler home afterwards.
- 5) During business hours, please contact the Community Health Worker at 443-683-0565 or a Care Transition Liaison at 410-382-0581 to see the patient in the ED to secure follow up care. After business hours, please leave a message on the Care Transitions after hour phone line at x3809 so that a member of the team can follow up with the patient.

This plan approved for this patient by the Care Coordination Committee, a multidisciplinary team of physicians, social workers, case managers, nurses, outcomes managers, health advocates, and other members of the patient care team, on \*\*\*.

---

### **CT Utilization Quicktext**

@name@ has been identified as frequenting the ED for a chronic condition. @name@ has received extensive work-ups in the ED, many involving significant doses of radiation.

- 1) The patient's usual complaint is \*\*\*
  - a. Please look through the patient's record for further description of their usual complaint to decide whether radiological evaluation is warranted
- 2) As higher cumulative doses of radiation pose significant long-term risks to the patient, please be judicious in your use of radiology with this patient. If they present with pain typical for their usual complaint, consider alternative diagnostic investigations that do not use radiation.

[Chesapeake Regional information System for our Patients](http://www.crisphealth.org)

[www.crisphealth.org](http://www.crisphealth.org)



- a. Please look through the patient's record (including CRISP) for their previous CT scans and results

#### Pain Management

- 1) If there is no significant, **objective** criteria for narcotic analgesia requiring admission please use alternative methods for pain control.
- 2) Each and every time @name@ presents to the Emergency Department, @his@ pain management specialist should be contacted. If no pain management specialist is available, the primary care doctor should be contacted. Unless **objective** criteria for narcotic analgesia exist, the patient's pain management specialist or primary care doctor should make all decisions regarding narcotic pain management in order to provide consistent care during each visit. **If no physician is reachable, please do not give narcotic analgesia unless serious objective criteria exist.**
- 3) No prescriptions should be written for controlled substances in the absence of serious objective pathology. Dental pain may be managed with the offer of a dental regional anesthetic, for example.
- 4) During business hours, please contact the Community Health Worker at 443-683-0565 or a Care Transition Liaison at 410-382-0581 to see the patient in the ED to secure follow up care. After business hours, please leave a message on the Care Transitions after hour phone line at x3809 so that a member of the team can follow up with the patient.

Please note that opiate-habituated patients may require dose adjustments (usually higher) when they are treated for severe objectively painful conditions, such as a gross deformity with extremity fracture.

This plan approved for this patient by the Care Coordination Committee, a multidisciplinary team of physicians, social workers, case managers, nurses, outcomes managers, health advocates, and other members of the patient care team, on \*\*\*.



## St. Agnes Hospital Example

Documentation - Desai, Samit MD

Octagon, Crazy

DOB: 1/23/70 46 F

SA0000008474 / SA00000715 / SBATVIG00007

Adult Main Emergency Dept REG I

Allergy/AdvReac: No Known Food/Drug Allergies

Document: High Utilization Program - High Utilization Program

### UR NOTE

#### Frequent User Program

**Program Highlights:** Patients for whom improved care coordination and communication across the continuum are vital have been designated for a

\*Enrolled? ☐ Yes, NO care plan

☐ Yes, WITH care plan

\*Care Program:

☐ HCAM

☐ Heart Failure Center

☐ West Baltimore

\*Date enrolled:

Previous Note?

☐ Yes

☐ No

Date of Previous Note:

#### Clinical Summary

\*Synopsis (include CRISP):

Recent Studies/Interventions:

#### Utilization Review

ED Visits (last 12 months):

Adm/Obs (last 12 months):

CT Studies (last 12 months):

Xrays (last 12 months):

MRI Studies (last 12 months):

Other Comments:

#### Care Map

\*Medical Plan:

Care Team Members:

Code Status:

☐ Full Code (CPR)

☐ DNR (no CPR):Intubate OK

☐ DNR/DNI:NIMV/Pressors OK

☐ DNR/DNI:No NIMV/Pressors

☐ DNR/DNI:No NIMV/Press OK

☐ DNR/DNI:Rx Symptoms Only

Psychosocial Issues:

Upcoming Appointments:

#### Case Reviewers

\*PopHealth Provider:

Care Manager:

Social Worker:

RN Navigator:

Date of Review:



## Appendix B: EHR Integration Approach

CRISP is actively working with hospitals and their EHR vendors to integrate care plans and care alerts into native workflows. The following steps outline the process for a hospital to develop, submit a care alert to CRISP and the process to receive a care alert from CRISP.

1. Hospital adds Care Alert to the “problems” section of a Continuity of Care Document (CCD)
2. CRISP extracts the care alert from the CCD
3. CRISP sends the care alert to the clinical data repository/portal as an HL7 result
4. Hospital queries CRISP for an on-demand CCD
5. Hospital receives the care alert in a specific CCD location
6. Hospital extracts the care alert and presents it to user in the EHR
7. Care Alert is also available in the Care Management and Patient Care Overview sections of the Clinical Portal

Hospitals that are producing care plans today are attempting to make it easy for providers to find care plans within their clinical systems. This is being done by prominently locating the care plan tab and providing in-context notifications that a care plan is available.

### Example of How Care Plans are Displayed in Clinical Systems

03	0	M...	Testfor, Ryan	22 y.o.	headache	1
04	0 <th>M...</th> <th>Test, Restraint</th> <th>22 y.o.</th> <th>ha</th> <th>1</th>	M...	Test, Restraint	22 y.o.	ha	1
05	3 <th>M...</th> <th>Xxtest, Frequent</th> <th>33 y.o.</th> <th>Pain, Back</th> <th>1</th>	M...	Xxtest, Frequent	33 y.o.	Pain, Back	1
06	0 <th>M...</th> <th>Golivetest, Itsgotimetwo</th> <th>30 y.o.</th> <th>Mania</th> <th>1</th>	M...	Golivetest, Itsgotimetwo	30 y.o.	Mania	1
07	0 <th>M...</th> <th>Xxtest, Caremanagement</th> <th>44 y.o.</th> <th>Pain, Arm</th> <th>1</th>	M...	Xxtest, Caremanagement	44 y.o.	Pain, Arm	1
08	0 <th>M...</th> <th>Xxtest, Discharge</th> <th>55 y.o.</th> <th>Pain, Back</th> <th>1</th>	M...	Xxtest, Discharge	55 y.o.	Pain, Back	1
09						
10						
11						
12						
13						
14						
15						
TR01						
TR02						

**Care Coordination Last updated: 2111**

**Active Patient FYIs**

**Care Coordination** last edited by Edmd Tst, MD on Tue Dec 2, 2014 3:46 PM

High Risk Patient Assessment changed

**Clinical Background**

- Crohn's Disease; Type 2 Diabetes; sickle cell disease

**Key Issues**

21 visits per FY 2014: mostly for abdominal pain related to chrohns disease

- Oct 11th 2013: ER visit, difficult getting access, got opiates/phenegan -? left AMA
- Oct 20th, 2013: 5 ER visits within 5 days, recommended admission for pain mngt
- Oct 30th, 2013: ER visit for abd pain, but appeared stable, ER doc felt patient had
- 7 ER visits btw December and January 21st
- 1/21/14: admitted to UMMS with DKA and unstable angina, CATH showed OBS CA